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JOURNAL
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FIBROID OF THE UTERUS

(ITS RELATION TO AGE AND PARITY*)

SWADESH BASU

Calcutta

Fibroid of the uterus has been known to be a disease of the elderly nulliparous women. It is not an uncommon disease. According to KLOB, 40% of women above 40 suffer from fibroid. It is commoner in coloured races (KELLY ; GRAVES).

Menstruation and child-bearing have special bearing on the aetiology of fibroids for they develop only during the menstrual era and disappear or remain stationary after the menopause unless some sort of secondary changes take place. The relationship between the incidence of fibroid and the child-bearing function is evidenced by the fact that the nulliparous women have been seen to be more susceptible to this growth than the parous women. Moreover we have seen that sterility and fibroid are very commonly associated together ; according to EDEN and LOCKYER, 30% of women with fibroids are sterile.

To find out a relation of age and parity with fibroid of the uterus, 435 cases were collected from the hospital records of the Chittaranjan Sevasadan, Calcutta, between the years 1926 and 1933. These cases were purely Bengalis and all of them had to undergo operation.

Here again as in my previous paper on "Prolapse of the uterus", I owe an apology to the readers for the unavoidable error about the accuracy of the age and previous obstetrical history due to the ignorance of some of the patients.

* Published with the kind permission of Dr. B. D. Mukherjee, the Chief Visiting Surgeon, Chittaranjan Sevasadan, Calcutta)

INCIDENCE OF AGE

In our series, we found the following data : Total cases—435.

Age.	*No.*	*Percentage.*
20-24 years	13	2.98
25-29 ,, ...	33	7.58
30-34 ,, ...	56	12.87
35-39 ,, ...	70	16.09
40-44 ,, ...	131	30.11
45-49 ,, ...	89	20.45
50-54 ,, ...	38	8.73
55 and above	5	1.14

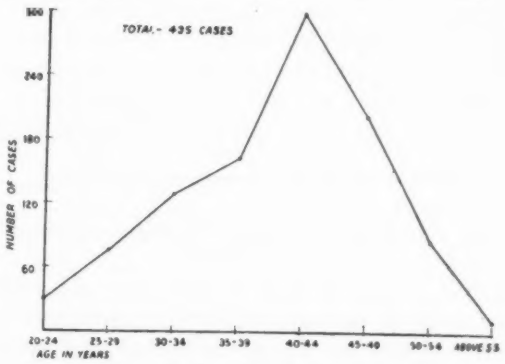

Fig. 1. *Showing the relation of age to incidence of fibroid.*

The youngest case was 20 years old, nulliparous. The oldest case was 60 years old with a history of one miscarriage at sixth month 38 years ago. The highest incidence was between the ages 40 and 44 ; after that there is a rapid decline till the age of 55 and above when it was almost negligible.

According to GRAVES, fibroid is rare under 25; most tumours begin their growth between 25 and 40 and become troublesome between 40 and 50.

MENGE-OPITZ: greatest incidence is between 30 and menopause. Most cases are diagnosed between 45 and 50.

EDEN and LOCKYER: Between 35 and 45, fibroid tumours are most likely to become troublesome.

INCIDENCE OF PARITY

Parity.	*No.*	Percentage.
Nulliparous	94	22.54
One ,, ...	69	16.54
Two ,, ...	35	8.39
Three ,, ...	51	12.23
Four ,, ...	40	9.59
Five ,, ...	28	6.71
Six ,, ...	34	8.15
Seven ,, ...	16	3.82
Eight ,, ...	21	5.03
Nine ,, ...	4	0.95
Ten and above	25	6.23

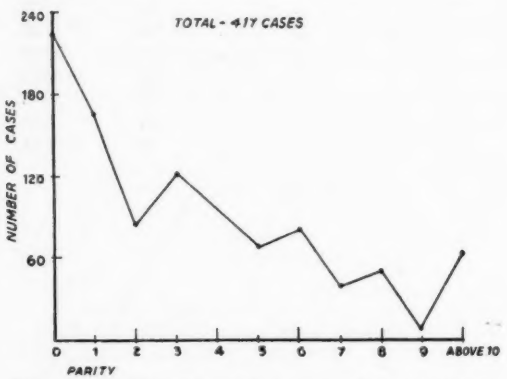

Fig. 2. *Showing the relation of parity to incidence of fibroid.*

In our series 22.54% of cases occurred in nulliparous women; the rest i.e. 77.46% of cases occurred in parous women. It was also seen that as the parity increased the incidence decreases.

The factor of sterility played an important part in the high percentage of fibroid amongst the parous women. As will be seen from the following figures, 34.73% of cases had their last child-birth more than 18 years ago; 58.38% had their last child-birth more than 12 years ago and 81% of cases more than 6 years ago. The longer the interval between the last child-birth and the occurrence of fibroid, the greater was the incidence.

In his series of 3,561 cases, TRACEY found that 20% showed definite disease of the ovaries and 14.5 % showed definite morbid changes in the fallopian tubes. There might be a causal relationship between these morbid conditions and it was suggested that tubal inflammation leads to sterility and sterility to the development of fibroids.

LAST CHILD-BIRTH

(Total 334 cases).

Interval in years.	*No.*	*Percentage.*
0-3 years	22	6.58
3-5 ,, ...	41	12.27
6-9 ,, ...	37	11.07
9-12 ,, ...	38	11.37
12-15 ,, ...	29	8.68
15-18 ,, ...	50	14.97
Above 18 years	117	34.73

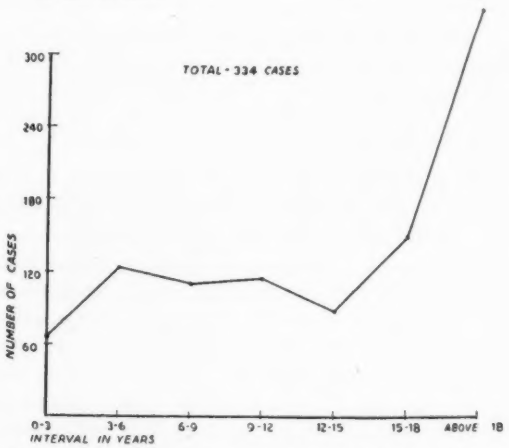

Fig. 3. *Showing the relation between the date of last child-birth and incidence of fibroid.*

Another factor was noticed in our series. 30.34% of cases were of submucous variety, of these 91% occurred in parous women and 9% in nulliparous.

CONCLUSION

(1) Highest incidence of fibroid was between the ages 40 and 44.

(2) Incidence of fibroid in nulliparous women was 22.54% and in parous women 77.46% Of these high percentages in parous women, 58.38% of cases had their last child-birth more than 12 years ago.

(3) In the parous women, the tendency of a fibroid to become submucous seems to be greater than in the nulliparous.

DISCUSSION ON MUSTARD OIL STANDARD

S. N. De & G. N. Mukerjee, B.Sc., & B.Sc. (Physiology)
(*From the Calcutta Corporation Laboratories*)

The Local Government Notification No. 735 P.H. dated March 1928, under section 422 of the Calcutta Municipal Act of 1923 in declaring the normal constituents of food, defines "mustard oil as the fixed oil expressed or extracted from mustard seed, and shall have a saponification value of not less than 169 and not more than 175, and an iodine value of not less than 96 and not more than 104". In the rules made under section 422 of the same Act, the Local Government in its Notification No. 736 P.H., March 1928, further lays down (*a*) where in a sample of mustard oil the saponification value is less than 169 or more than 175 it shall be presumed, until the contrary is proved, for the purposes of the Act that the mustard oil is not genuine by reason of the addition thereto of extraneous oil.

(*b*) "Where in a sample &c., &c., the iodine value is less than 96 or more than 104 it shall be &c., &c., of extraneous oil." These normal constituents for mustard oil were subsequently adopted by the Local Government in their notification No. 1977 P.H., dated July 1930 to operate in Bengal.

In fixing the above limits information was largely drawn on the data available in the Calcutta Corporation Laboratory which has been tackling the intricate problem of food adulteration since 1893. By analysis of a large number of pure commercial samples of mustard oil obtained from the mills and genuine samples expressed from mustard seeds, the Calcutta Corporation adopted the figures 169 to 174 as safe limits of saponification values and prior to 1928 the purity or otherwise of mustard oils was mainly judged by these saponification limits and colour tests for other vegetable oils.

In 1924-25 a Committee was appointed by the Calcutta Corporation to revise its own standards with a view to enable the Local Government to declare the normal constituents of different articles of food under section 422 of the C. M. Act of 1923. The Committee was assisted by experts like Col. Stewart, Director of Public Health Laboratory, Bengal; Dr. H. K. Sen, D.Sc., P.R.S., Professor of applied chemistry, University College of Science; Dr. B. N. Ghosh, D.Sc., P.R.S., then Asst. Chemist, Alipore Test House; Mr. B. N. Das of Bengal Technical Institute; Mr. R. V. Briggs, Member of the Society of Public Analysts, England; Mr. Cooper, Chemist, Smith Stanistreet & Co.; the Chief Chemist of Messrs. D. Waldie & Co., and Dr. T. K. Ghosh, Analyst, Calcutta Corporation. After a series of sittings extending over a year and after careful consideration of all available data the experts recommended the figures 169-175 as limits of saponification value and 96-104 as limits of iodine value for mustard oil. These figures were finally adopted in 1928 by the Local Government as mentioned above.

In the paper 'Constants of the Mustard Oil' by Dr. B. B. Brahmachari, L.M.S., D.P.H., Director, Bengal Public Health Laboratory, recently published in the Indian Medical Gazette, the author, after examining 21 samples of Sarisa oil, 13 samples of Swet Sarisha oil and 15 samples of Rai oil, draws the conclusion that the 'limits fixed as standards for the saponification and iodine values of the mustard oil under the Bengal Food Adulteration Act are too narrow. This he bases on the reasoning that out of altogether 49 samples of the three varieties of mustard oil examined by him, one sarisha oil and 5 rai oils, i.e. only 6 samples have saponification value above 175 up to 176.5 and similar anomalies are also observed in the case of iodine values. How far this is sound would be presently judged on further analysis of this valuable paper.

Prior to the advent of one of the authors into the Bengal Public Health Laboratory, S. N. De and A. C. Das Gupta analysed 34 samples of musard oil in 1922 manufactured in Calcutta and Dacca jails, and obtained figures ranging between 169.26 —174.6 for saponification value and 96—103.3 for iodine value. During 1931 and 1932 one of us examined 54 genuine samples of mustard oil for

verification of the standards and obtained his supply from all the jails of the province. His figures were saponification value 170.3—175.3 and iodine value 96—103.5. Thus the figures obtained on analysis of all these 88 samples are fully corroborative of the standards fixed by the local Government. But to maintain his point Dr. Brahmachari bases his argument on a series of assumptions. Firstly, it is assumed, probably rightly, that the jail mustard oil is derived from the seed of one kind of mustard, viz., Indian Rape or Sarisha as he terms it—without any attempt being made to ascertain the actual fact, at least in the case of 54 samples obtained by him from the different jails. Secondly, it is assumed that the commercial mustard oil may be derived from any of the three varieties, viz. ,Rai Swet Sarisha (*B. Campestris*) and Sarisa or Lutni (*B. Napus*), although admitting that the commercial oil is usually pressed from either or both Sarisha or Swet Sharisa with a varying proportion of Rai. Thus armed with data based on assumptions Dr. Brahmachari is further emboldened to assume that the value of the two official constants may not be the same for oils of all these three varieties which prompted him to carry on further researches, viz. determination of saponification and iodine values of 21 samples of Sarisha, 13 samples of Swet Sarisha and 15 samples of Rai oils. These samples were supplied to him, at his request, by the different Health Officers of the province and are said to be genuine oils pressed in the presence of reliable persons.

On a careful study of the detailed figures obtained by him (*Vide Appendix C*) from the aforesaid samples it is observed that all the 13 samples of Swet Sarisha oils are within the limits of the legal standards, of 21 samples of Sarisha oil only 2 gave figures slightly above the official limit while 19 passed it, and of 15 samples of Rai oil 10 were within the limits while the remaining five figures 175.5, 175.9, 176.3, 176.4 and 174.6 as saponification values and similar higher iodine values. Leaving aside Corporation figures which will be dealt with separately later on, it will be interesting to take into account other authentic recorded figures along with the figures of Dr. Brahmachari and other workers in the Public Health Laboratory. Total number of samples dealt with by each worker has been classified under two heads; (*a*) those lying within official limits and (*b*) those above it (for details see *Appendix B*).

Thus out of 189 samples of Sarisa or Swet-Sarisa oil only 4 exceed the legal limits and out of 19 samples of Rai oil 6 exceed the limit—6 in the hands of Dr. Brahmachari and one by other workers in his laboratory. This latter sample gave 178 saponification value coupled with a very high iodine value and should be accepted with reserve; at least Dr. Brahmachari's figures prove the abnormality of this sample.

Kinds of Oil.		Total No.	No. within limits.		No. above limits.	Observer.
Swet-Sarisa	..	1	1		Nil	B. P. H. Laboratory.
(Campestris)	..	8	8		Nil	Crossley & Le Sueur (J. S. C. I. 1898).
Campestris	..	52	50		2	Archbutt (ibid) 1886).
,,	..	13	13		Nil	Brahmachari.
,,	..	2	2		Nil	Lewkowitsch.
Jail Oils	..	34	34		Nil	S. N. De.
,,	..	54	54		Nil	Brahmachari
Sarisha	..	164	162			
(Napus)	..	3	3		Nil	Crossley & Le Sueur
,,	..	21	19	23	2	Brahamachari.
,,	..	1	1		Nl	B. P. H. Laboratory.
Total	..	189	185		4	
Rai Oil (Juncea)	..	3	3		Nil	Crosslet & Le Sueur.
,,	..	15	10	13	6	.6Brahamachari.
,,	..	1	Nil		1	.. B. P. H. Laboratory.

With regard to the Sarisha, Swet-Sarisha and Rai oils examined by Dr. Brahmachari, it is peculiar to note that the samples from Midnapur, Birbhum, Bankura and Dinajpur (*vide Appendix C*) gave invariably high figures in all the three varieties. In the absence of any information whether the oil in these particular districts is manufactured mainly from local or imported seeds and bearing in mind the fact that the district towns largely import mustard oil and seeds from Calcutta and Suburban markets, it is natural to conclude that the supply of main bulk of seeds and oil in these districts originate from the same source as in other districts. As such these high figures should be looked upon with suspicion. It is quite possible that the seeds were crushed in a *ghani* where previously either adultered mustard seeds or seeds other than mustard had been crushed and the remnant oil always adhering to the collecting pot

attached to the ghani thus got unintentionally mixed up with the pure oil and gave high figures. These considerations should have been taken into account before forming any definite opinion. Granting the authenticity of the oils supplied to him as being genuine DR. BRAHAMACHARI will be constrained to admit that the high figures obtained by him in the few cases of Rai oil would disappear in oils expressed from mixed seeds.

On investigation into the actual state of affairs it is found that the Calcutta and Suburban mills use as a rule, mustard seeds grown outside Bengal and depend for their supply on Howrah market where these seeds are largely imported. The term mustard seed is loosely used to denote the Indian Rape, Kolza or Mustard and includes all the varieties of Brassica species grown as field crop in India. There are at least four varieties available in the market commercially known as Sweti, Lutni, Kajli and Rai. The identification of the exact botanical origin of the seeds and fixing them to a particular variety in the Brassic group is more than what an ordinary investigator is capable of unless one takes an enormous trouble like PRAINE (*vide Watt's Commercial Products of India, .p.*175) to germinate the seed and observe the actual botanical characteristics of the whole plant including the flower and seed.

Roughly speaking the varieties used in the mills may be classified under the following heads :—

a) Brassica Suncea—or black mustard seed known as Rai.

(*b*) Brassica Campestris (subsp. Glauca) the white or yellow variety known as Sweti.

(*c*) Brassica Napus (subsp. Dichotoma)—the dark or brown varieties known as Lutni, Kajli, Tori &c. The seeds are larger in size as distinguished from Rai.

From recorded figures (CROSSLEY & LE SUEUR) and information gathered from mills, it is known that the available quantity of fixed and essential oil in the different varieties of mustard seed are ; Rai 22 to 25%, Sweti 33%, and Kutni 32%. Watts, while recording the opinion of different workers on Indian mustard seed and oil (vide Commercial Products pp. 181 and 184) observes "most writers confirm that the yield of oil from Rai is much less than from other varieties, being one-fourth instead of one-third." It is therefore natural to conclude that from commercial point of view the information of DR. BRAHMACHARI that 'mustard oil of the market is usually expressed from either Sarisha (Lutni) or Swet-Sarisha (Sweti) or both the Sarisha and Sewt-Sarisa with a varying proportion of Rai should be the universal practice. As a matter of fact this is the universal practice as revealed by personal investigation into the state of affairs obtaining in the mills. In no mills Rai is used alone as it is commercially unsound on account of its yield being too low, but as a general practice in high grade oils it is mixed with Lutni or Sweti in order to increase the sweet pungent smell due to essential oil being present in greater percentage in Rai than in other seeds.

These facts are very important from the point of view of fixing standards. The difficulty of finding a standard for judging the purity of mustard oil is at *par* with other oils and fats, either vegetable or animal, which in their nature are of variable composition depending upon climatic conditions, species, nature of soil &c. Oil from individual seeds may give too low or too high a figure making it occasionally difficult to establish a presumption on the basis of a deficiency in one or other of its constitutents, that the oil is not genuine, but this difficulty is greatly minimised in case of commercial samples. As the greater mass of commercial samples of mustard oil, i.e. mustard oil which comes within the purview of the Food Acts, is the mixed product of different varieties, the extremes due to exceptional causes tend to disappear.

The Calcutta Corporation Laboratory has been examining a large number of ghee, mustard oil and other food products every year, far in excess of what is done in rest of the laboratories in India taken all together and its experience and opinion in this respect should count above all others. Prior to 1928 the purity of mustard oil was judged by the saponification limits of 169-174 and colour tests for the presence of vegetable oils. From a careful study of the figures from 1904 to 1931 (*vide Appendix A*) it would appear that judged by this standard the percentage of adulteration varied from as high as 80% to as low as 6%. In the year 1920 out of 550 samples 71, i.e. 13% were found adulterated, in 1923 out of 856 samples 104, i.e. 12% and in 1924 out of 880 samples only 52, i.e. 6% were found adulterated. On the otherhand in 1931 out of 2278 samples as many as 818. i.e. 36% were found adulterated although they were judged by a wider standard viz. 168-175.

It cannot be argued for a moment that in 1924 there was a preponderance of sarisha and swet-sarisha seeds in the mills so as to give very low figures and that in 1931 the manufacturers took a special fancy for Rai seeds which might have given high figures upto 177 in a large number of cases and unjustly declared adulterated by the Corporation on the basis of 175. It may be mentioned here that to allow for accidental admixture, samples giving figures upto 176 are usually given benefit of doubt, unless there are very good reasons for declaring otherwise. The manufacturers are too conservative in this respect to alter their stereotyped practice. The wide variations in the percentage of adulteration leads to one and one conclusion alone that adulteration of mustard oil is still being practised on such extensive scale as to call for more stringent laws to cope with it. The existing limits which may pass out 94% of a very large number of samples as genuine, can, by no stretch of imagination, far less by any logic or reasoning, be declared as being too narrow. Any attempt to further widen the limits, as LEWKOWISTCH very rightly points out, (*Lewk Vol. ii p.* 899) 'would be to take out of the hands of the analyst his best weapon against the adulterator or the careless farmer'.

Mustard oil is largely adulterated, according to market prices with one or more of the following oils, viz., ground-nut oil, niger seed oil, poppy seed oil, sesame oil, linseed oil and to a very small extent with mineral oil. What is usually practised is to mix the different seeds with mustard in varying proportions and express oil out of the mixture. Of these ground nut, niger seed and poppy seed are the most commonly used adulterants.

Taking into consideration the chemical characteristics of these oils it will be observed from the following table that saponification value is the outstanding characteristic which atonce distinguishes these oils from mustard oil (*see Appendix D*).

	Sapon. value	Iodine value.
Arachis Oil	.. 185.6–194.8	92.4–100.8 (Indian Nuts Lewk. p. 317)
Niger Seed Oil	.. 188.9–192.2	126.6–133.8 (Crossely & Le Sueur)
Poppy seed Oil	189.0–196.8	133.7–137.1 (Crossely & Le Sueur)
Sesame Oil	.. 188.5–193	103.0–114.0 (Lewk. p. 225)
Linseed Oil	.. 190.2–195.2	170.2–201.8 (Lewk. p. 52)
Mineral Oil	.. Nil	Nil

On account of the large proportion of erucic acid in mustard oil its saponification value is very low and as LEWKOWITSCH points out 'the saponification value of the sample under examination will easily lead to the decision whether any other fatty oil with the exception of ravision oil, is present to a notable extent'. Iodine value serves as a corroborative test in case of adulteration with niger seed, poppy seed or linseed oil, but it breaks down when the adulterant is arachis oil or sesame oil whose iodine values are closely allied to mustard oil. LEWKOWISTCH recommends determination of the iodine value of mustard oil to serve as a valuable guide as to the presence of ravision oil, which can not be detected by the saponification value alone. He, therefore does not consider it essential to determine the iodine value in every other case as saponification value is sufficient to serve the purpose.

Presence of sesame oil in mustard oil is easily detected by the Baudouin colour test, just like Halphen's colour test for cotton seed oil. Baudouin test is so sensitive that the presence of a mere trace of sesame oil will give faint reaction. But a faint Baudouin reaction is not sufficient ground alone, unless supported by the saponification value, to declare a sample of mustard oil as adulterated. It is important here to note the remarks of LEWKOWISTCH in connection with arachis oil. He says "it should be noted that arachis oil is usually pressed in the same establishment as sesame oil, since it is impossible to keep presses and press cloth separate for each kind of oil, commercial arachis oil contains a sufficient amount of sesame oil to give the colour reaction of the latter faintly. Due regard should be paid to this fact in judging a sample of commercial arachis oil which gives a faint Baudouin reaction (*Lewkowitsch Vol. II, p.* 314). The same remark holds good in the case of mustard oil.

The greatest difficulty is encountered with when arachis oil happens to be the adulterant. Barring saponification value, which is the only guide in such cases, determination of iodine value or crude arachidic acid by the 'lead-salt-ether' method affords no help to the analyst. Arachis oil contains about 5% of crude arachidic acid (a mixture of arachidic

and lignoceric acids) having a melting point of 71 to 73°C. 'Hence the amount of acid present represents approximately 1.20 of the arachis oil. By multiplying the weight of the crude arachidic acid found in a sample by 20 the amount of arachis oil actually present is derived (*Lewk. Vil. II, p.* 320). But this does not apply, to mustard oil which has been definitely proved to contain as much as 1.4% of crude arachidic acid by ARCHBUTT and other workers (*Archbutt, J. S. C. I.*, 1898, 1009). ARCHBUTT is of opinion that 'the fact of finding arachidic acid in olive oil is not conclusive proof of the presence of arachis oil, unless rape and mustard oils are proved to be absent. (ibid). The mere detection of 1% crude arachidic acid in a sample of mustard oil is no conclusive proof that it is adulterated with 20% of arachis oil, and the saponification value is the only weapon left in the hands of the analyst to deal with such cases. In a sample of mustard oil having 174.0 saponification value and 100.0 iodine value adulteration with 20% arachis oil was detected by chemical analysis by DR. BRAHAMACHARI. This he cites as an instance to establish the absurdity of the definition of mustard oil as given in Notification No. 1976 P.H. dated 24th July 1930, which in his opinion is 'not only unnecessary but illogical and misleading'. It would be a welcome news to all chemists to learn that a research worker like DR. BRAHAMACHARI has invented a chemical method by which adulteration with arachis oil could be detected with such accuracy. But if he had recourse to the only available method known up to date, viz. the lead-salt-ether method, consideration of facts previously stated in this connection would only serve to prove the absurdity of his conclusion, and also of his recommended suggestion based on erroneous conclusion.

The existing definition is sufficiently wide and comprehensive so far as the mention of the chemical constants is concerned and deletion of this portion is totally unwarranted. If any alteration is at all necessary it would be desirable to make the meaning of the word 'mustard seed' more clear. It should read as follows "mustard oil is the fixed oil expressed.....from the different cultivated varieties of rape seeds belonging to the Brassica group mixed together or otherwise, and shall have &c., &c."

Taking all things into consideration we may emphasize on the following points :

(1) Out of 189 genuine samples of sarisha or swet sarisha oils dealt with by different workers only four gave figures slightly above the legal limits.

(2) Of the 12 samples worked out by Crossley & Le Sueur as many as 11 gave figures sufficiently within the legal limits and one sample gave very high figures which are doubtful and discarded by LEWKOWITSCH.

(3) The very high figures (183 & 119) of VAN DER WIELEN obtained from Bombay seed are unreliable and abnormal.

(4) The commercial mustard oil i.e. mustard oil which comes within the purview of the Calcutta Municipal Act of 1923 or Bengal Food Adulteration Act of 1919, is the mixed product of different varieties of mustard seed sold in the market, and gives average figures eliminating the extremes.

(5) It has not been established that oil from Rai seeds alone form an appreciable bulk of commercial mustard oil in Calcutta market or markets in the district towns of Bengal.

(6) The slightly high figures observed by DR. BRAHMACHARI in a few samples of Rai oil would disappear in commercial mustard oil which is 'usually pressed fromeither sarisha or swet sarisha or both the sarisha and swet-sarisha with a varying proportion of Rai'.

(7) In the opinion of the Calcutta Corporation, which should be considered an authority on this subject, the existing limits are sufficiently wide and fair in as much as 94% of commercial samples may pass out as good when judged by these limits.

(8) Last but not the least, inspite of the existing limits which are sought to be termed as being too narrow, sophistication of mustard oil is practised on extensive lines even upto the present day ; any attempt to further widen the limits would be not only dangerous with far-reaching consequences, but would give a larger handle to the adulterator who is already keeping pace with the progress of chemical analysis and very ingenuously taking

shelter under the existing loopholes to avoid the rigours of law.

The limits fixed by the local Government are sufficiently wide to give the adulterator a chance to mix adulternts upto a certain extent with impunity. One fails to understand the logic when it is seriously argued to extend the scope by further widening the limits simply on the score of protecting a few abnormal samples if genuine at all.

The Committee appointed by the Board of Agriculture for Butter Regulations in the United Kingdom, in their final report recorded in a blue book laid down the principle that in fixing a limit one has to be mindful of two considerations; viz., it should be sufficiently low not to press harshly upon too large a proportion of genuine if abnormal samples; on the other hand it must be sufficiently high to take away the inducement to admix adulterants to a point at which they would pass the limits. (*Final Report of the Butter Regulation Committee*).

The foregoing considerations are sufficient to reject this portion of DR. BRAHMACHARI'S recommendation. Of his other suggestions determination of refractive index deserves consideration. It may serve as a valuable guide, but the close alliance of the refractive index of mustard oil with those of its adulterants makes it less important as a test to be relied on. Detection of actual adulterants by the colour tests should be always resorted to. Estimation of the adulterants by the rule of three method would be misleading, specially when the adulterant is arachis oil. Saponification value should be the only guide to declare whether the adulteration is very high or low. A sample giving figures within the limits should be given benefit of doubt even if a faint reaction is obtained by the colour tests and should be passed. No sample should be declared as adulterated unless its saponification value exceeds the existing limits, on the otherhand a sample giving high saponification value should be condemned even if the iodine value lies within the limits and colour tests are negative.

In reviewing DR. BRAHAMACHARI'S paper attempt has been made to look at it entirely from a scientific and practical point of view. The author should be thanked for giving his serious attention to this much vexed problem. The value of mustard oil as an important article of food can not too greatly be emphasised specially when the health of the citizens is considered. Beri-beri, a deficiency disease, has come permanently to stay in an epidemic form. The rice theory having been exploded, there are good reasons for suspecting that adulterated mustard oil plays an important role as a causative factor. Leaving aside all other considerations, humanity alone demands that more stringent laws are immediately necessary to check the evil. One of the important loopholes which enables the sophisticators to evade the law is the existence of the words 'edible oil'. Although it has been lately declared to include certain number of oils in their pure state, there is nothing in the Act to compel a manufacturer or seller to declare the nature of oil he is manufacturing or selling which gives him sufficient protection to sell adulterated mustard oil as edible oil. A byelaw is immediately needed to make it obligatory to fix labels on the receptacle declaring the identity of the oil contained in it and also to declare the identity when demanded by a Food Inspector. It should also be made punsihable by law to manufacture or store any other oil in an establishment where mustard oil is usually manufactured so as to reduce the chance of wilful or accidental admixture.

APPENDIX A.

Total number of commercial samples of mustard oil examined and number found adulterated, each year, in the Calcutta Corporation Laboratory from 1904 to 1931.

Year.	Total No. Examined.	Total No. found adulterated.	Percentage of adulteration.
1904 ..	119	96	80%
1905 ..	153	116	77%
1906 ..	67	42	63%
1907 ..	25	15	60%

Year.	Total No. Examined.	Total No. found adulterated.	Percentage of adulteration.
1908 ..	103	38	37%
1909 ..	105	65	62%
1910 ..	155	85	65%
1911 ..	196	100	51%
1912 ..	220	107	50%
1913 ..	206	60	30%
1914 ..	191	43	23%
1915 ..	230	102	44%
1916 ..	291	97	33%
1917 ..	352	116	33%
1918 ..	400	216	54%
1919 ..	454	106	26%
1920 ..	550	71	10%
1921 ..	685	170	25%
1922 ..	813	175	22%
1923 ..	856	104	12%
1924 ..	880	52	6%
1925 ..	717	69	95%
1926 ..	1093	380	35%
1927 ..	1109	318	29%
1928 ..	1000	169	17%
1929 ..	1239	328	27%
1930 ..	1573	336	20%
1931 ..	2278	818	36%

APPENDIX B.

Saponification and Iodine values of oil from Indian Rape, Kolza & Mustard.

Species.	Sapon. Value.	Iodine Value	Observer.
B. Campestris N. W. P.—Red ..	171.0	99.2	Crossley and Le Sueur
,, Glauca ..	171.4	97.2	
,, Dichotoma (Napus ?) ..	172.2	104.8	
Punjab do (do ?) ..	173.4	96.2	
Bombay-Brown ..	172.8	94.1	
,, Yellow ..	169.4	96.0	(J. S. C. I 1898 p. 992)
B. Alba ..	171.2	96.7	
B. Napus-Lutni ..	167.7	7.7	
B. Juncea-var Rai ..	172.1	101.8	
B. Nigra-black ..	173.0	110.0*	
Do. do. ..	173.3	98.9	
B. Juncea, var Mustard Bombay	180.1	108.2 total 22	

(*These figures are too high and should be accepted with a reserve. Lewkowitsch has discarded them, vide Lewk, P. 271 & 274).

Saponification and Iodine values of oil from Indian Rape, Kolza & mustard.

Species	Sapon. Value.	Iodine Value	Observer.
Rape Oil (Campestris)	.. 172.9	102.1	(Lewkowistch) Vol. II, p. 270.
,,	.. 168.8	104.2	
B. Campestris	.. 171–175.0 (50 samples)		
(52 samples)	.. 175–176.0 (1 sample)		
	176–177.0 (1 sample)§		
B. Napus (Sarisa)	.. 170–1 5.0 (19 samples)	98–103.5	
(21 samples)	.. 175–176.5 (2 ,,)	105–107	Brahmachari
B. Campestris (swetsarisa)	.. 171–175 (10 ,,)	8–102	do.
(13 samples)			
B. Juncea (Rai)	.. 171–175 (10 ,,)	105–107	
(15 samples)	.. 175–176.4 (5 ,,)	107–109	do.
Jail Mustard Oil (Rape ?)	.. 169.2–174.6(34 ,,)	96.1–103.5	S. N. De & A. C. Das Gupta.
(34 samples)			
Do. (54 samples)	.. 170.3–175.3*	96.2–103.5	Brahamachari

(* this slight excess over the official limits may be considered as personal error).

B. Napus (Sarisa	.. 174.4	105.7	
B. Campestris (Swetsarisa)	.. 174.6	100.3	B. P. H. Laboratory.
B. Juncea (Rai)	.. 178.0*	116.7*	

(* The high saponification value coupled with a high iodine value should be accepted with reserve).

Kind of oil.	Total number.	No. within limits.	No. above limits.
Swetsarisa (Campestris) & Sarisa (Napus)	18	185	4
Rai (Juncea)§	19	13	6

APPENDIX C.

Saponification and Iodine values of mustard oil obtained by Dr. Brahachari from different districts,said to have been pressed from pure seeds in the presence of reliable persons.

District.	Sarisha Oil.		Swetsarisa Oil.		Rai Oil.	
	Sapon. Value.	Iod. Value.	Sapon. Value.	Iod. Value.	Sapon. Value.	Iod. Value.
Midnapur*	.. 175.45*	101.9	174.0	99.5	175.5*	106.45
Birbhum*	.. 176.55*	107.5	174.25*	99.2	176.3*	106.0
Bankura*	.. 174.55*	100.1	174.35*	97.9	?	?
Rangpur	.. 174.15	101.7	171.75	97.4	?	?
,,	.. 172.0	99.7				
Jessore	.. 171.55	99.0	?	?	171.5	106.2
,,	.. 170.05	99.8	?	?	71.25	106.4
Murshidabad	.. 172.15	103.1	172.1	100.95	174.9	105.9
Burdwan	.. 173.15	103.5	172.1	8.95	174.15	108.0

District.	Sarisha Oil.		Sweetsarisa Oil.		Rai Oil.	
	Sapon. Value.	Iod Value.	Sapon. Value.	Iod. Value.	Sapon. Value.	Iod. Value.
Howrah	.. 172.8	98.7	171.4	97.95	?	?
,,	.. 172.05	100.3	..	..	..	..
,,	.. 172.25	99.4	..	..	..	..
Dinajpur*	.. 174.9*	105.7	175.2*	102.1	176.4*	106.5
Faridpur	.. 172.7	101.4	173.75	101.4	173.4	105.85
Burdwan	.. 172.15	99.95	?	?	173.15	106.13
Chittagong	.. 173.1	98.7	172.65	98.05	?	?
Nadia§	.. 172.0	99.3	?	?	172.8	107.4
Noakhali	.. 172.65	9.85	?	?	174.6	105.3
,,	.. ..	..	..	..	175.2	106.1
24-Perganas	.. 174.5	99.8	?	?	?	?
Pabna	.. 173.65	99.25	172.1	98.8	175.9	108.4
,,	.. 172.8	100.2	..	..	..	..
Tippera	.. ?	?	171.7	98.9	..	?
Rangpur	.. ..	..	171.2	8.0	..	..

* It strikes as peculiar that the three kinds of oil from these districts gave invariably higher figures as compared with other districts.

APPENDIX D.

Chemical characteristics of the common adulterants of mustard oil.

Name of oil.	Origin.	Sapon. value	Iodine value.	B. R. Index at 40°c.	Observer.
Arachis oil	.. Indian	175.6–194.8	92.4–100.8		Crossley & Le Suerur &
Nigar oil	.. Indian	183.9–192.2	126.6–33.8	63.0	,, Lewk p. 137.
Poppyseed oil	.. Punjab Bengal & N. W. P.	188.9–192.2	133.7–137.1	63 4	,, Lewk p. 125.
Sesame oil	.. Indian	188 .5-193	103.4-114.0	59.6–60	Wagner & Lewkowtisch p. 225.
Linseed oil	.. Indian & Foreign	190.2–195.2	170.2–201.8	72.5–74.5	Lewk, p. 52.

GONORRHŒA—SOME OBSERVATIONS ON ITS TREATMENT

PRAFULLA KAMAL ROY, M.B.
Comilla.

Since the publication of my article on the above subject in the *Journal of the Indian Medical Association*, in August, 1933, I had occasions for further observation with reference to the value in treatment of the *Gonococcus Immunising Vaccine* prepared in my laboratory. Here is another case of interest treated with this vaccine.

Report of a Case

S. K. G. Comilla, appeared on 20-11-33 for :—
(1) Slight urethral discharge, especially in the morning, since some time past.

Previous History

Had gonorrhea some 4 years ago with pain and urethral discharge. Had also a syphilitic chancre at the same time. For the syphilis, he received local applications and other necessary treatments.

For the gonorrhoea, he had urethral irrigations and also mixed gonococcus vaccines. This lessened the discharge in a few day's time and he took recourse to "Healing Balm". He was well with this for a year or so : but then a relapse occurred with symptoms of arthritis as well. This time he was treated in Calcutta with irrigations again and a further course of the same vaccine; he also had a course of arsenical preparations. His ailments all subsided under this treatment and he was quite in good health for several months ; but again a relapse occured for the second time in the present form.

Microscopic Examination of the present discharge showed presence of gonococci.

Treatment and Progress

Upto 30-11-33, he received daily irrigations with Acriflavin and also had mixed gonococcus vaccines twice a week. No appreciable improvement followed.

1-12-33. Irrigation with pot. permanganas and intra-dermal injection of Gonococcus Immunising Vaccine.

2-12-33. Discharge almost same., Irrigation was continued and Hexamine was given.

3-12-33. Discharge almost same Urine turbid, acid in reaction much sediment.
given, irrigation with pot. permanganate, intra-urethral Gono. Immg. Vac. and Hexamine as before.

4-12-33 Discharge not much altered. Urine same. Same treatment as on 3-12-33.
also, Lot. Protargol intra-urethrally to be retained for some time before the intra-urethral vaccine.

5-12-33. Discharge thinner: Urine less turbid less sediment, slightly acid.
Same treatment as on 4-12-33.

6-12-33. Discharge thin. Urine same.
Treatment same.

7-12-33. Discharge same. Urine same.
Treatment same.

8-12-33. All same.
given, intra-dermal Gono. Immg. Vac. as well.

9-12-33. Discharge very thin, Urine clearer, Acidity same.
Treatment as on 7-12-33. Also Sodi Bicarb. along with Hexamine.

10-12-33. Discharge thicker and yellowish Urine almost same.
Treatment as on 9-12-33.

11-12-33. Discharge almost same, Urine same,
Treatment same. Also given mixed infection vaccine.

12-12-33. Discharge as on 11-12-33. Urine turbid as before, sediment much less, faintly alkaline.
Given, irrigation followed by Protargol only to be retained for some time.

No Gonococci Found in Discharge

13-12-33. Discharge as before. Urine clearer, much sediment, faintly acid.
Sounds passed ; followed with irrigation and bladder wash.
Introduced Protargol and kept for 15.min. only.

14-12-33. Discharge more than before. Urine turbid, less sediment, faintly acid.
Given, irrigation and bladder wash ; also intra-urethral Gono. Immg. Vac. mixed with Protargol ; and, mixed infection vaccine.

15-12-33. Discharge same. Urine same.
Passed sounds again followed with bladder wash.
Also given, intra-urethral Protargol, retained for 15 min. and intra-dermal Gono. Immg. Vac.

16-12-33. Discharge same. Urine turbid, scanty sediment, faintly acid.
Given, bladder wash ; and intra-urethral Gono Immg. Vac. with Protargol.

17-12-33. Discharge thick, fair amount. Urine turbid, sediment fair amount, faintly acid.
Given, bladder wash ; and intra-urethral Gono. Immg. Vac. (modified) ; and also mixed infection vaccine.

Fair Number of Gonococci Found in Discharge

18-12-33. Discharge thinner, scanty. Urine clearer, sediment fair amount, slightly acid.
Given, bladder wash ; and also intra-urethral Gono. Immg. Vac. (med.).

19-12-33. Patient got fever last night.
Discharge thinner and less in amount. Urine same. Slight orchitis developed.
Given, no irrigation, no injection. Prescribed alkalies with urotropine.
Also advised fomentations for orchitis.

20-12-33. No fever in the morning.
Discharge thicker but not profuse. Urine clearer. Orchitis persisting.
Given no irrigation, no injection ; but Atebrin 1 tab. T. D. and mixture of 19.12.
Also advised fomentations to continue.

21-12-33. No fever. Discharge as before. Urine turbid, scanty sediment, slightly acid. Slight orchitis still persisting.
Given no irrigations etc., but continued mixture of 19.12 and also fomentations. Advised Atebrin till 15 tab.

22-12-33. No fever ; Discharge less profuse, rather thin. Urine turbid, scanty sediment, slightly acid. Slight orchitis still present.
Given, bladder wash and intra-urethral Gono. Immg. Vac. (med.) also intra-dermal Gono Immg. Vac. and fomentations.

23-12-33. *No Discharge.* Urine still turbid, scanty sediment, acid, Orchitis not fully gone down.
Given, no irrigations no injections ; but fomentations as before.

24-12-33. *Slight watery discharge again ;* just a wetting of the meatus only in the morning. Slight orchitis still persisting ; Urine turbid, scanty sediment, faintly acid.
Given irrigation and bladder wash. Also, intra-urethral Gono. Immg. Vac. (med); and mixed inf. vaccine. Fomentations to continue.

25-12-33. *No Discharge.* Acute orchitis and epididymitis since last evening with fever and pain.
Advised local applications and fomentations for the orchitis along with other necessary drugs.

26-12-33. *No Discharge.* Urine high colored, scanty. Orchitis slightly gone down ; feeling better.
Given same medicines as before ; also advised plenty of drink.

27-12-33. *No Discharge.* Urine much clearer and more profuse. No fever ; Patient feels much better. Orchitic pain felt only on pressure.
Medicine as before.

29-12-33. *No Discharge.* Urine clear and profuse.
Orchitis and epididymitis gone. No fever.
Advised usual diet and same medicines for some days more.
Also advised to report when ever any discharge noticed.

25th October, 1934. *NO DISCHARGE STILL.*

Uptil now six cases have been mentioned representing six different varieties. They all, however, seem is point to one important conclusion that the *Gonococcus Immunising Vaccine* may effect a cure, without relapse, within a month of treatment even in subjects refractory to the ordinary known methods of treatment. It is necessary, therefore, that one should know something about this seemingly important product.

Facts about the Gonococcus Immunising Vaccine and the Gonococcus Endotoxin.

The publication by Maj. Lambkin of "A preliminary note in the employment of certain constituents of the gonococcus in the treatment and other constituents in the test of cure" may be said to be responsible for our investigation on the subject even though working with our somewhat limited facilities and materials. The object of our investigation has been,—

First, to test and be satisfied about the therapeutic value of metabolism of the genococcus obtained and used in the manner suggested by Lambkin ; Secondly, to test these products with reference to any specific value they may possess in the treatment of gonorrhoea in general ;

and lastly, to seek to employ them in a manner so as to prove to be of maximum therapeutic effect.

We accordingly proceeded to prepare a vaccine following the observations of Lambkin in this respect and also used it in the manner suggested by him ; the processes involved in these may be briefly stated thus ;

The gonococcus, after being obtained directly from the discharge, is further cultivated for the development of polar bodies. When, thus, a growth has been obtained essentially rich in polar bodies, it is washed off in saline and the resulting emulsion subjected either to fractional certrifugalization or to the action of gravity. By this process the polar bodies are separated from the bodies of the gonococci which settle down at the bottom, leaving the former in solution and suspension in the supernatant fluid. This supernatant fluid is now collected and made up into the *Gonococcus Immunishing Vaccines* for intra-dermal and intra-urethral administration as required.

It will thus be seen that the *Gonococcus Immunising Vaccine* is essentially made up of the polar bodies contained in the supernatant fluid. These polar bodies are composed of alpha nucleoprotein and beta nucleo-histone. Clinical experiments have shown that both the alpha nucleoprotein and the beta nucleo-histone are antigenic and relatively non-toxic ; so they appear eminently suitable for use in the vaccine treatment of gonorrhea.

For intra-dermal injection, the vaccine is employed in a strength which represents the product of 200 mil. gonococci. There is, usually an interval of a week or 10 days between the injections.

For intra-urethral injection, the dose, generally, is the product of 20,000 mil. gonococci. It is usually repeated the next day and the ensuing days should the urethral discharge still show gonococci. There is always a thorough irrigation with weak permanganate or similar antiseptic lotions prior to the introduction of the vaccine into the urethra ; and

steps are taken to secure that the vaccine is retained within the urethra for as many hours as possible.

The general treatment of the patient is so conducted that the urinary pH is maintained throughout within the limits of 7.2 and 7.4, the most favourable reactions being obtained thereby.

Speaking broadly, there is, as observed by Lambkin also, a general and sustained improvement in the cases as a whole when treated on the above lines. The incidence of complications have fallen and cases so treated have not relapsed. (*vide Case Notes published, J. I. M. A. Vol. II No.* 12 *Aug.* 1933).

Thus satisfied with regard to the value in treatment of the vaccine prepared, we next proceeded to examine it with regard to any specific value it may possess in the treatment of gonorrhea in general. Cases II and III indicate the nature of our investigation in this direction. The organic extracts, mentioned therein, were derived from lymph glands and testes and contained both nucleoprotein and nucleo-histone. They were so prepared as to be identical in chemical nature to the *Gono. Immg. Vac.* mentioned above except for the nucleo-protein and nucleo-histone contents and they were used exactly in a manner similar to the latter. The results, however, were not very encouraging. and in Case II when the extract was replaced by the vaccine,decided improvement followed. It seemed to us, therefore, that the gonococcus nucleo-protein and nucleo-histone acted in the manner of a specific in the treatment of gonorrhea. We could notice another fact in this connection. The nucleoproteins produced by different strains of gonococci behaved similarly so far as the beneficial effect of cure was concerned ; it appeared immaterial, therefore, whether, in treatment, they were derived from an autogenous or from a foreign strain. (*Vide Cases IV, V and VI*).

From what has been stated above, it appears that we could not arrive at conclusions similar to those of LAMBKIN and WOOLDRIDGE with respect to this vaccine. These observers seem inclined to the view "that any antigenic action possessed by these germ nucleo-proteins is more an expression of simple nucleic acid chemistry than of specific origin". Though LAMBKIN admits that SIDNEY ROWLAND'S Plague Vaccine consisted of nucleoproteins extracted from the *B. Pestis*, he is of opinion that it only seemed to point to the nucleo-proteins as consisting of or being in some way connected with the immunising complexes. We are, however, inclined to go further and interpret the result of that vaccine as being due to the specific action of the nucleo-proteins concerned. The fact that WOOLDRIDGE was able to produce immunity to anthrax in rabbits by means of thymus alpha nucleo-protein, may only prove to be an instance of non-specific protein therapy. The same may also be said of LAMBKIN'S observations "that mice that have received 20 mgm of dried rabbit thymus intraperitoneally, when inoculated 4 days later with 2 M. L. D., of living gonococcus, survive without illness as they do when the specific gonococcus nucleo-proteins are used."

While we hold such a view regarding the specific nature of the bacterial nucleo-proteins, we are conscious that our interpretation is based on very meagre facts. It is quite possible that further observations may convert us to the views of LAMBKIN and WOOLDRIDGE. But in that case it would seem to follow that the employment of nucleoproteins, derived from any sources whatsoever, would lead to the production of immunity in any given case irrespective of the nature of infection present.

It will be evident from the discussion above that any difference that may exist between us is only in matters of interpretation ; there is, however, no difference in matters of finding. In fact, we wholly agree with LAMBKIN in his observation that in cases treated on the above lines, the incidence of complications has fallen and there has been no relapse.

The maintenance of the urinary reaction within the limits of pH. 7.2 and 7.4 is an important and necessary condition for the production of optimum results (*Vide Case V*). For practical purposes, an almost nutral or faintly acid reaction of the urine serves the purpose quite well.

Having so far considered the value in treatment and the nature of action of the gonococcus nucleo-protein and nucleo-histone,it remained for us to see how best the remedy could be employed with a view to the production of maximum benefit. We confess,we have not been able to proceed very far with the solution of this side of the problem. It has been in our experience, however, that the original polar body vaccine of LAMBKIN sometimes failed to effect a "complete cure" even when the

discharge appeared to be absolutely free from gonococci. This was specially to be seen in chronic gonorrhea ; a modification of the original vaccine had, therefore, been on trial for such cases. (*Vide Cases IV, V and VI*). This appeared to have served the purpose it was meant for ; but we are at work at present for a product which will be equally beneficial both in acute and chronic cases.

A word must now be said about the endotoxin constituent of the gonococcus used by LAMBKIN as a test of cure. Since we believe with him "that the antigenic properties of a gonococcal vaccine are practically all contained in the alpha nucleo-protein and the beta nucleo-histone components of the polar bodies and the remainder of the gonococcal body is undesirable for use in immunisation", we made use of the ordinary stock gonococcal vaccine in some of our experiments to work as temporary provocative agents in deciding the question of cure in preference to LAMBKIN'S elaborate endotoxin preparation. A temporary "flair up" was noticed as a result in a quiescent gonococcus carrier with the appearance of gonococci in the discharge. When a patient's condition was thus deliberately provoked into activity, he received an intra-urethral non-toxic injection as soon as the condition was recognised.

Thus, we have given here rather a long account of work carried on with the exclusive purpose of solving the problem of treatment of a disease hitherto known as incurable. Since we have reasons to believe from our work that the gonococcal nucleoproteins have a specific value in the treatment of gonorrhea, we have particularly directed our attention towards facilitating the application of this useful product in general practice. The net result of our work so far has been :

(1) to bring the cultivation of the gonococcal polar bodies within the easy reach of the ordinary bacteriologist ; and when this has once been done,

(2) to make them profitably applicable to every case without waiting for the development of an autogenous product ; and lastly,

(3) to render these bodies useful for chronic urethral discharges irrespective of their cause, thus eliminating the necessity for the general practitioner of efficient bacteriological diagnosis.

We look forward now to the hope of establishing a general principle by which all cases of urethral discharge, acute or chronic, may be brought under effective control at the earliest possible opportunity irrespective of their cause.

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EDITORIAL COMMENTS

Vaccination Certificates

From the correspondence that has been forwarded us we became aware that considerable feeling has been aroused by the action of the Government of India in requiring that Vaccination Certificates of emigrants from India issued by registered medical practitioners other than Civil Surgeons, Port Health Officers and District or Municipal Medical Officers of Health have to be countersigned by one of such officers. The countersignature is to be given free of charge. A reference to the Inspector-General of Civil Hospitals, U. P., has elicited a reply that this action was taken by the Government as a result of the protests received from the Foreign Governments, about the issue of the false certificates by Indian practitioners, e.g. "the Iraqui Ministry for Foreign Affairs reported to the British Embassy, Bagdad, that false Vaccination Certificates were issued to certain passengers who landed in Basra, and requested the British Embassy to inform the Government of India that the Iraq Government will not accept in future any vaccination or inoculation certificate which is not issued by a Government Department. Similar protests had previously been received from certain African Governments". The letter goes on to state that "Under the International Sanitary Convention of 1926 each Government shall determine the procedure to be applied in its own ports to arrivals from any foreign port (Article 15). It was agreed that a certificate in form suggested would be acceptable if its realiability could be assured ; but in this connection the foreign Government pointed out that it will be realised that the origin of a certificate issued by a private medical practitioner in a foreign country cannot be verified by the Health Officer at the port of debarkation and that some system of official authoritative verification before embarkation is necessary, in order to ensure that the person carrying the certificate is in fact the person to whom it relates, and that the certificate itself has been issued by a registered medical practitioner. Continuing the letter from the Inspector-General states that "the origin of this trouble lay primarily in the issue of false certificates by Indian Practitioners. The alternative to taking steps to ensure the acceptance of these certificates by foreign governments was that all passengers proceeding out of India and landing at their ports will be placed in quarantine. The Government of India naturally accepted the alternative of requiring counter-signature as laid down in the circular". Since this provision holds good in the case of I. M. S. and R. A. M. C. officers it is stated not to be directed against Indian practitioners.

Undoubtedly the Government of India have to consider the interests of Indian emigrants to other countries but it is a matter of regret that the interests of these emigrants should not have been secured by other means more in keeping with the self respect of the medical practitioners in this country. As it is the Government of India have tamely acceded to the threat of foreign governments when these governments might have been easily satisfied in some other more suitable way. We do not question the fact that the only certificates which ought to be accepted are those granted by registered medical practitioners. That the same provision holds good for I. M. S. and R. A. M. C. officers is not the point at issue. The viciousness of the regulation applies equally to them as it does to the Indian practitioners who form the preponderating elements of registered medical men in this country. In our opinion if a false certificate has been issued by a registered medical practitioner it should be an easy thing to trace the practitioner who granted it and call him to book severely but to do what the Government of India have done and subject the certificates issued by these men to the

indignity of having them counter-signed by Civil Surgeons and Port Health officers as to cast an unwarranted slur on the whole of the Indian medical profession. To our mind the significance of the whole incident lies in the fact that it is one of those instances which indicate that a wider gulf lies between the Government medical authorities and Indian medical men. If there was between them a close bond of sympathy, the right feeling, sentiments, ambitions, prestige and self-respect of one would re-act on the other and cause those who are in authority to take a firm stand in maintaining the privileges and dignity of Indian medical men as a whole. We submit to the Government of India that there is ground for reconsideration of their action in this matter. We must admit the anxiety of other Governments to take every precaution against the introduction of diseases by people arriving from other countries but as we have suggested above, there are other and better means of meeting the desires of these foreign Governments than by the means at present adopted by the Government of India.

Government seem to be anxious to ensure (*a*) that the individual carrying the certificate is in fact the person to whom it relates and (*b*) that the certificate has been issued by a registered practitioner. To take the latter first it seems to offer little difficulty. We suggest that it should be made incumbent upon the practitioner to give his registered number and the medical Register on which his name is borne. By this means, false certificates could easily be traced back and if a point was made of tracing back false certificates returned by a foreign government and the culprit duly visited with the penalty of his fraud the practice would quickly die down. With reference to establishing the identity of the emigrant, we should have thought that a system of thumb impression (in the case of illiterates) and signatures (in the case of others) together, perhaps, with a photograph of the person concerned would serve the purpose far better than counter-signature by Civil Surgeons and Port or other Health Officers who are easily open to be cheated in the question of impersonation. These are a few suggestions worth traversing and offer a desirable alteration to the course Government has taken.

Medical Curriculum

Recently in one of our lay contemporaries appeared an article dealing with a draft curriculum which the Executive Committee of the Indian Medical Council, we understood, had circulated to the various medical faculties for an expression of opinion. Our contemporary makes the council the object of scathing criticism. It would appear that the suggested curriculum is, if not a slavish copy, a substantial reproduction of the curriculum established by the British G. M. C. There is perhaps no harm in taking the curriculum of the British G. M. C., or that of any other medical authority of any other country as a basis of the curriculum which one would have in India, but at the same time it is a fact that the special conditions of a particular country, specially a country like India, require to be recognised and provided for in the training of students. A thorough knowledge of obstetrics is important to medical men whether in England or India, but while this is so there is equally or even greater need for intimate knowledge of the diseases that beset this country. It is within the knowledge of every medical man in India that such diseases as kala-azar, malaria, filaria, cholera, plague, dysentery and small-pox call for most of their attention and they are so widely spread in India that unless one is thoroughly trained in their treatment more harm than good is likely to result. This is a particular feature of this country and considerable emphasis on these subjects is necessary We feel that unless the medical faculties of the Universities give due consideration to these aspects of the problem they will be failing in an important duty to the country where the conditions are not like those of England which call for a departure from the practice in western countries where such diseases are practically unknown. We join with our lay contemporary in hoping that the University medical faculties will endeavour to correct these grave defects in any draft curriculum that may have come before them or at least that the various non-official representatives in the Indian medical Council will be awake to the situation and for their part also seek to provide a curriculum of training that is in keeping with the conditions we find here.

CURRENT MEDICAL LITERATURE

MEDICINE

Cardiovascular Observations in Neurosyphilities.

C. T. Burnett and C. A. Rymer (*Ann. Int. Med.*, Vol. 8, 340 Sept. 1934) have intensively studied a group of 215 cases of neurosyphilis in order to determine the frequency and type of cardiovascular involvement and summarise their observations as follows:

33.9 per cent. show some form of cardiovascular pathology, independent of the electrocardiogram.

2. These findings are in agreement with others as to the importance of aortitis in syphilis, which is the most frequent type of cardiovascular pathology in syphilis.

3. In association with syphilitic aortitis electrocardiographic abnormalities were present in 68 per cent. of the cases.

4. 33.3 per cent. of the paretics, 23 per cent. of tabo-paretics and tabetics, and 44.4 per cent. of meningovascular cases, without physical or roentgen-ray abnormalities of the heart,showed abnormal electrocardiograms; and the electrocardiogram was abnormal in a much higher proportion in the presence of physical, roentgen-ray or combined physical and roentgen-ray abnormalities. Abnormal physical signs appear to be more frequently associated with electrocardiographic changes than are roentgen-ray changes alone.

5. A significant increase in electrocardiographic abnormalities was found in neurosyphilis, but no change which can be considered as characteristic of cardiovascular syphilis, although the authors were impressed with the incidence of coronary changes in their series.

6. The incidence of electrocardiographic abnormalities not associated with physical or roentgen-ray changes noted in this series of neurosyphilitics justifies the routine use of the electrocardiogram in these cases as a means of an earlier recognition of cardiovascular involvement.

7. The incubation period of neurosyphilis is shortened in paretics, tabetics, and meningovascular cases who have received early or late, but inadequate treatment.

8. Cardiac lesions seem to be found more frequently in those cases inadequately treated. This is demonstrable by either physical, roentgen-ray, or electrocardiographic changes.

9. There is definite need for more adequate therapeutic procedures in early and late syphilis to decrease the incidence of neurosyphilis.

J. C. B.

Paroxysmal Tachycardia.

C. Papp, (*II Policlinico*, No. 13, 1934, *Ref. Ars. Med.* No. 8, 1934) advocates the following method of treatment for treatment of paroxysmal tachycardias. The first measure is systematic compression of the eyeball which produces a reflex irritation of the vagus nerve (Aschner's reflex). This compression must be carried out with a certain amount of force, the eyeballs being compressed from below upward and simultaneously from the outer side inward. It is advisable mean while to keep the heart under observation by auscultation and by feeling the pulse. The procedure is somewhat painful if carried out with the correct technique and the necessary exercise of force, but against that we must weigh the fact that in at least 30% of the cases it is promptly successful. Papp has never observed any unpleasant occurrence though others have occasionally reported syncope. If the compression is of no avail, the patient should be put to bed immediately and given an intramuscular injection of $\frac{1}{2}$ mg. ouabaine (a French preparation of strophanthin which can be injected intramuscularly). Transient pain is occasionally felt at the point of the injection. The method has proved helpful in every case, even where the tachycardia had been present for some days.

J. C. B.

The Diagnosis of a Cerebellar Abscess.

O. Marburg, (*Wiener klin. Woch.* No. 13, 1934, *Ref. Ars. ed.*, No. 8, 1934), points out that in 30%-50% of the cases cerebellar abscess results from diseases of the ear, most frequently from chronic otitis media, with the formation of cholestatoma, less frequently from suppuration of the mastoid process or purulent thrombosis

the sinus. Cerebellar abscess may also follow an injury, more often, of course an open injury of the skull when a foreign body has penetrated but in certain circumstances even a trauma without an open wound. Finally, general infections may be the cause of a haematogenous or metastatic formation of a cerebellar abscess ; in such cases multiple abscesses may develop in the brain.

Early and late abscesses are distinguished according as to whether the abscess follows the causative fundamental disease immediately or only after a period of latency.

The general symptoms of a cerebellar abscess differ from those accompanying a tumour as follows : the headache is less acute, choked disc is present in at the most 10-20% of the cases, the character of the pulse is much less frequently that of pressure pulse than with a tumour ; only in about 50% is the temperature raised, sometimes indeed it is subnormal. The mental aspect is often striking (this was especially noticeable in men wounded during the war) : the patient is morose, apathetic without initiative, his psychic functions are inhibited whilst the sensory functions are relatively good. In the present day encephalography and ventriculography provide the possibility of confirming the diagnosis. With late abscesses where there is no more suppuration outside the brain. the persistence of leukocytosis of the blood may be an aid to diagnosis. Lumbar puncture does not as a rule give any clue and may, in certain circumstances, promote the spread of the suppuration. According to recent investigations, nystagmus is the most important among the local symptoms. Spontaneous nystagmus toward the affected side after the labyrinth has been excluded (either through disease or artificially) speaks for an abscess, as does nystagmus occurring under similar circumstances toward the healthy side if it persists for more than two or three days. The other symptoms are dependent on the extension of the abscess in the cerebellum. When it is of otogenous origin disturbances of the upper extremities (ataxia, adiadochokinesis, rebounds phenomenon) are predominant. If the abscess spreads towards the cerebellum or is localised in the midele of it. serious disturbances of gait and asynergia occur. To these are added disturbances of the cerebral nerves, in the first instance of the abducens. Symptoms of pyramidal affection are less frequent.

J. C. B.

Insulin in Malnutrition

H. Blotner, (*New Eng. J. Med.* 211 : 103-106, July, 19, 1934 *Ref. Med. Times*, Oct. 1934) reports the use of insulin in the treatment of malnutrition in 79 non-diabetic adults (33 men and 46 women) who had no organic disease, but who were definitely underweight for their age, sex, and height. Most of them had been chronically underweight for years and had failed to gain weight under treatment by forced feeding, rest and medicines ; many were "somewhat nervous easily tired, and lacking in energy". In most cases 10 units of insulin were given three times a day twenty to thirty minutes before meals ; in a few cases the dosage was slightly more or less. A high caloric, mixed diet were ordered. In most cases the insulin treatment was continued for six to ten weeks, in some cases for a longer period. All these patients showed a definite gain in weight under the insulin treatment, which in general was more rapid at the beginning of treatment and became less marked as the weight approached normal. The majority maintained the gain in weight after insulin was discontinued, a few lost weight owing to some special strain—acute infection, overwork or worry ; while a few others showed a further gain up to as much as fifteen pounds. Most of the patients showed a definite improvement in their general condition, with increased activity and strength. A study of these cases indicated that the gain in weight under insulin treatment was due to increased intake, better digestion and assimilation of food. It was not due to water retention (as shown by studies of the water metabolism) but to actual increase of the fat deposit. The author concludes that "The use of insulin in a nondiabetic malnutrition is a reasonable, uncomplicated and practical method of treatment."

J. C. B.

PATHOLOGY & BACTERIOLOGY

Virulence of B. Typhosus and Resistance to O Antibody.

A. Felix and R. M. Pitt (*J. Path. and Bact.*, Vol. xxxvii, No. 3, 409-420, May 1934), describe a new conception about the Virulence of B. typhosus. In this paper they say that the virulence of B. typhosus is closely associated with resistance to the action of O antibody. Highly agglutinable

strains are of low virulence whereas inagglutinable strains are highly virulent. Both types show the general characters of smoothness and also do not differ in their content of antigen.

The inagglutinability of the virulent strains is not maintained after the death of the organisms. When killed by heat or by treatment with various chemicals the suspensions are agglutinated by O immune serum to titre limit. In this respect too it is entirely immaterial whether the H antigen has been destroyed by the treatment to which the organisms have been subjected, or whether the H antigen has been left intact. The fastness to O agglutinins is also suppressed by growing the inagglutinable strains for 24 hours on agar containing 1 in 900 phenol. Simultaneously the virulence of the cultures is reduced very considerably. This fact demonstrates the intimate relationship between the virulence and resistance to the action of O antibody.

The strict parallelism between susceptibility to O agglutination, and bactericidal action of serum shown in *vitro* tests by FELIX and OCITZKI (1926) seemed to traverse the earlier observations published by BRAUN & FEILER (1914) & FEILER (1915-16). According to these workers, inagglutinability and fastness to bactericidal action are two different properties independnt of each other. It is obvious that this conclusion was reached from observations on H agglutinins only and is not valid with regard to O agglutination.

The experiements described in this paper strongly suggest that the O antibody plays the same role in natural resistance as in acquired immunity. If it is correct, as the result of this investigation suggests, that the virulence of B typhosus depends on the power to resist the action of the O antibody, it seems justifiable to assume that natural resistance to infection with this type of organisms depends on the presence in the invaded host of an adequate quantity of this antibody.

The question arises whether the conclusions reached from experiments with B typhosus are more generally applicable to other bacteria which also do not produce the so-called typical exotoxin. B. typhosus is not a natural pathogen of the mouse or guineapig and the dose required to produce a high death rate following inoculation with B. typhosus is very much greater than that needed in similar experiments with B. aertrycke or B. enteritidis Gaertner. It is conceivable that the relative insusceptibility to infection with B. typhosus offered particularly favourable conditions for demonstrating the intimate relationship between virulence and resistance to O antibody. Similar experiments with other bacteria which are devoid of typical exotoxin may throw some light on this question.

The results of this investigation do not contradict the accepted view that rough forms are nonvirulent. It has been shown that the virulence of rough variants is still lower than that of the avirulent smooth type. On the other hand, the results clearly indicate that mere presence of smooth O antigen does not define virulence. Some obscure property is required to render this antigen resistant to the action of the O antibody. The nature of the factor is described in later paper.

Reference should be made to a paper published by WILSON (1930), who very carefully compared the virulence to mice of certain variants of B. aertrycke. He described two types of variants which showed the general characters of smoothness but differed in virulence very considerably. Since WILSON's technique of the O agglutination test was to use suspensions of organisms which had been steamed for one hour to destroy the H antigens, any difference on agglutinability of the living bacteria that might have existed between the two types was bound to escape notice.

Finally it should be mentioned that the results of these experiments may also have some bearing on the old controversy with regard to the prophylactic value of antigens derived from virulent and avirulent organisms. This question obviously requires renewed investigation.

D. N. C.

A New Antigen of B. Typhosus.

A. FELIX and R. M. PITT (*Lancet*, Vol. II, 186-191, 1934), in a further communication describe a new antigen of B. typhosus which is intimately associated with virulence of strains. It has been seen that the mere presence of smooth O antigen does not itself determine high virulence, and that some unknown factor is required to render this antigen resistant to the action of O antibody. By experiments they have found out that the factor responsible for the virulence is an antigen separate and distinct from the long established H. and O.

antigens of B. typhosus. In this paper they have demonstrated the existence of this antigen and its immunological significance. Since it was seen that the heat-killed antigens of both agglutinable and inagglutinable strains did not differ in any way, protection experiments were carried on with living antigens which showed that such immunisation with inagglutinable strain led to the production of an antibody which was absent from the sera of the rabbits inoculated with living agglutinable organisms and also from those immunized with heated suspensions of most virulent inagglutinable strains. This antigen has been designated as "vi" antigen by the authors. It has been shown that all the virulent strains reacted with all the sera containing the "vi" antibody, thus indicating the uniformity of the antigen concerned. The independence of the "vi" antibody of the accompanying O and H agglutinins has been demonstrated by absorption tests. The protective property of the "vi" antibody has also been found to be unaltered in the absence of H and O antibody. But it has been seen that O antibody has a definite neutralising effect on the so-called endotoxin of B. typhosus, whereas the "vi" antibody is incapable of this action. It should be clearly understood that virulence and toxigenicity of B. typhosus are independent of each other and the presence of "vi" antigen while increasing the virulence does not cause any increase in the toxicity, and necessarily "vi" antibody has no endotoxin-neutralising power.

It is obvious, therefore, that this new conception has a direct bearing on the theory and practice of anti-typhoid inoculation and of serum therapy of typhoid fever. It will, therefore, be necessary to consider incorporation of the highest possible content of "vi" antigen in addition to the normal quota of O antigen in the preparation of prophylactic vaccines against typhoid fever.

D. N. C.

Species Immunity to Virulent Streptococci

H. B. Day (*J. Path. and Bact.*, Vol. xxxvii, 169, 1933), reports the formation in cultures of highly virulent streptococci (both haemolytic and non-haemolytic) of a special species or "v" antigen which is quantitatively related to virulence. He suggests that the ability to form this substance protects virulent streptococci from from phagocytosis and is a measure of their virulence or resistance to attack. In broth cultures this antigen is only formed by highly virulent strains during the phase of active growth and is almost entirely attached to the cocci. In serum-broth cultures this antigen is also present in the culture fluid and persists longer. This species or "v" antigen resembles other antigens of pyogenic cocci in being:

(*a*) resistant to acid,
(*b*) destroyed on heating in a alkaline medium,
(*c*) destroyed by exposiure to the action of bacterial enzymes,
(*d*) readily absorbed to protein on precipitation of the latter.

Injection of "v" antigen excites active immunity to all virulent streptococci, haemolytic and non haemolytic, while the sera of animals so trated confers passive immunity.

D. N. C.

SURGERY

Pulmonary Embolism Following Surgical Operation.

H. E. Robertson, (*Am. J. Surg.* 26 : 1, 15) describes in general terms the usual picture of a case of pulmonary embolism and points out the striking similarity amongst all such cases. He also describes the post-mortem findings.

Discussing the possible factors which may be responsible for this catastrophe he says that the principal factor is surely neither injury to the vascular wall, nor infection, nor increase in the coagulability of the blood. It is simply stasis or stagnation of the circulating blood at these particular situations (prostatic plexus, pampiniform plexus, iliac and femoral veins). This stasis may occur because local dilatation and consequent loss of motility of some portion of the vascular system has taken place or because there is actual decrease in the force or rapidity of the heart's action, thus slowing the entire blood current.

After an abdominal operation the patient is forced to lie quietly in bed over a considerable period of time. The pulserate and blood pressure tend to become lower. Then not only the abdominal wall, but the whole body is rather effectually "splinted" by the operative wound. Respiratory movements are checked, abdominal breathing and all of the other activities connected with

muscular contractions of the parietes are inhibited. The maximal effect of these reduction is seen following the first week and it is in the second week that the largest number of fatal embolisms is seen.

On the contrary, if infection develops, giving a rapid pulse and increased respiratory rate, this accident rarely happens. In patients affected with thyrotoxicosis, the rapid heart serves as a factor of safety.

The rational prophylactive procedure, therefore, would be to increase the circulation in those regions of stagnation, for it is quite clear that the more rapidly the blood flows, the less tendency there is to the growth of intravital thrombi. Massage at frequent intervals, passive and active motion of the legs, frequent moving and turning of the body, and encouragement of an increased respiratory rate by deep breathing are very helpful. Local application of heat is very important. Vascular stimulants, such as thyroid entracts, might be indicated in selected cases.

G. M.

Operative Indications in Carcinoma of the Stomach.

J. QUENU and C. JACQUELIN, (*J. de méd. et chir. prat.* 104 : 772-783, 1933), have operated in 96 cases of gastric cancer. In 27 cases gastrectomy was done (7 operative deaths), in 51 cases gastrojejunostomy (38 posterior, 13 anterior, 2 operative deaths) and in 2 gastrostomy. In the remaining 16 cases the laparotomy findings showed that nothing useful could be done. No follow-up is given.

The authors enumerate the following as absolute contraindications to operation: extensive direct spread or regional lymph node invasion as shown by the extent and immobility of the mass ; peritoneal dissemination as indicated by ascites with or without palpable nodules ; metastasis to the liver as shown by palpable nodules on the outer surface or lower border of that organ, marked anemia, even in the absence of foregoing findings.

Two factors present difficulties, since they often stand on the border line between operability and non-operability, the decision depending largely on the experience and temperament (audacity and temerity)of the surgeon : the extent and the site of the gastric tumor itself. The authors consider that a tumor occupying the cardia, even though limited to that region, is extremely difficult or practically impossible to resect, the technical difficulties being the same as those applying to the cardia of the esophagus. A pyloric tumor, whether or not involving the entire antrum, with invasion of the lesser curvature, as demonstrated radiographically, generally indicates further upward extension and inoperability, especially when the stomach is small ; whereas invasion of the greater curvature, unless extending far into the fundus, does not contraindicate operation. In cases of this kind and in other doubtful cases, exploratory operation is indicated. The authors emphasize that this is for some patinets a dangerous operation in itself, and in any case a difficult one. The surgeon, after exposing the stomach, must use his eyes before his fingers, and exercise the greatest gentleness in palpation. If it appears impossible to remove the cancer together with all the involved lymph nodes, gastrojejunostomy should be done only when there is pyloric stenosis ;it should not be done solely for the sake of doing something. The authors consider gastrostomy or jejunostomy hardly worth doing. In their opinion, if gastrectomy is contraindicated, and if there is no pyloric stenosis to justify gastrojejunostomy, it is better to do nothing. Apart from these two forms of intervention there seems to be no operation which is justifiable as being likely to prolong tolerable life for any appreciable time.

G. M.

Benign Tumors of the Small Intestine.

R. M. MOORE and H. C. SCHMISSER, (*South, M. J.* 27 : 386-393, 1934), report three benign tumors of the small intestine. A cavernous hœmangioma was found in the third portion of the duodenum of a fifty-eight year old negro at autopsy. Death was supposedly due to loss of blood, the clinical picture resembling that a severe and progressive anemia. The second patient, also a negro, thirty-eight-year-old, entered the hospital with acute intestinal obstruction. At operation he was found to have an extraluminal tumor which had so twisted itself as to cause obstruction of the ileum. Resection was performed, but the patient died on the operating table. The third tumor was a myoma removed from a thirty-five-year-old colored woman who had felt a hard tumor mass in the right lower quadrant. In addition to the main tumor, a mass of histologically similar structure was removed about

six inches higher in the ileum. Recovery was uncomplicated.

The authors have collected all the tumors of these three types reported and find 114 distributed throughout the small intestine, appearing with the greatest frequency in the ileum. The vast majority were intraluminal and single. The most common clinical manifestations were intussusception, obscure intestinal disorder and anemia. There are ten good illustrations and an extensive bibliography.

G. M.

Benign Tumors of the Cecum, their Differentation and Treatment, with Report of two Cases.

J. J. McGrath and S. Eiss, (*Am. J. Surg.* 24 : 88-93, 1934,) report two cases of benign tumors of the cecum. One patient, operated upon with the typical clinical picture of intussusception was found to have two lipomas in the cecum. The larger one, 3,4 cm. in size, had produced an ileocecal intussusception. Resection of the cecum with part of the terminal ileum and ascending colon was followed by an unenvntful recovery, and the patient had remained well for 18 months. The second patient was found to have a tremendous thickening of the cecal wall near the ileocecal junction, producing a large tumor mass. It was thought to be inflammatory in origin, and resection was not done. Seven months later because of a persistent sinus and recurring symptoms, the wound was reopened and the mass excised. The pathologist reported the mass as inflammatory, probably tuberculous in origin. No mention is made of the fate of the patient.

The clinical and pathological aspects of benign tumors of the intestine are discussed. Lipomas are usually manifested by intussusception, rarely producing symptoms until this occurs. They comprise roughly 20 per cent. of all benign tumors in the gastrointestinal tract, are commonly single but occasionally multiple. Originating as a rule in the submucosa, they may grow either toward or away from the lumen, producing submucous or subserous tumor masses. Lipomata are about 50 per cent. more frequent in the large bowel than the small. They are not prone to malignant degeneneration, and surgical excision usually result in a permanent cure. Many tumors are indentified only at autopsy. Pathologically they resemble lipomas elsewhere in the body. The hyperplastic form of intestinal tuberculosis occur most frequently in the cecum of individuals exhibiting no other signs of systemic infection. Nothing definite is known regarding its etiology, but it has been supposed that continued irritation renders the bowel wall susceptible to invasion by the tubercle bacilli. The diagnosis of tuberculosis is favored by the long duration of slowly progressive symptoms in a relatively young individual. Differentiation from appendicitis is favored by the absence of a localized area of tenderness and the gradual increase in the size of a non-tender, movable mass.

G. M.

Epithelial Cysts of the Renal Pelvis, Ureter and Bladder.

In some 5,000 necropsies G. H. Wilson, (*J. Path. and Bact.* 39 : 171-178, 1934), found two cases of epithelial cysts of the urinary tract, one in a man of fifty-four dying from bronchopneumonia following operation for chronic duodenal ulcer, the other in a man of fifty-eight dying from pernicious anaemia. In both cases the cysts occurred in the renal pelvis and upper part of the ureter, the condition being bilateral in the first case. Some of the cysts contained the ovoid bodies described by previous writers as parasites. In these two cases these bodies were always associated with degenerated epithelial cells, and the author thinks they represent an inspissated albuminous exudate. He discusses the pathogenecis of these epithelial cysts, which may also occur in the bladder, and concludes that they result either from chronic inflammation or from degenerative changes occurring in epithelial inclusions, and that the formation of either cysts or inclusions may be followed by tumor formation.

G. M.

Cysts of the Semilunar Cartilagus of the Knee.

J. P. Hosford, (*Proc. Roy. Soc. Med.* 27 : 1293-1295, 1934.) discusses the pathogenesis of meniscal cysts of the knee. This cystic change occurs about five times more frequently in the external cartilage than in the internal, and is observed most commonly between the ages of twenty and thirty years. The cysts are usually small, rarely exceeding the size of a walnut. On section the affected cartilage is normal in its narrow inter-

nal portion, but as it is traced outwards it become thicker than normal, and in the outer part of the section numerous cysts are seen, bulging into the surrounding tissues, as well as involving the cartilage. Some of the cysts are separated by a definite thickness of cartilage, while others are so close together, with so thin a membrane between, that they might be called multilocular. They contain thick mucoid, clear, colorless or slightly brownish material. The rest of the meniscus, anterior and posterior to the cystic portion, is normal, as are the adjacent articular surfaces of the tibia and fumur.

In the larger cysts there is a layer of lining cells, at first sight resembling endothelium, but the smaller cysts have no such lining. The author believes that these lining cells are simply compressed cells from the surrounding meniscal fibrocartilage in which the cysts lie. Sections show no evidence of inflammation, or of past hemorrhage suggesting trauma. Moreover, these cysts cannot be ganglia, originating between the peripheral surface of the meniscus and the synovial membrane covering it, since sections show both mucoid degeneration and early cyst formation deep on the meniscus. Trauma plays a doubtful part, if any, in the onset of the condition, the cause of which is unknown.

The author agrees with other writers that treatment consists in removal not only of the cyst or cysts but also of the major part of the meniscus from which they arise. G. M.

Results of the Surgical Treatment of Cancer,

L. Simon and W. Brandt report (*Radiol. Rundschau* 2 : 301-307, 1934), the results of the surgical treatment of cancer. excluding tumors of the female genital tract and skin, sarcomas and hypernephromas, treated in the Ludwigshafen City Hospital from 1915 to 1927. All patients not followed were considered dead. The following chart shows the results obtained.

1915 to 1927		Radical Operations.	Five-year Cures.
Stomach ..	365	110	24
Colon and rectum	128	48	13
Breast ..	125	101	35
Bladder ..	100	74	29
Prostate ..	35	23	1
Penis ..	11	9	2
Maxilla ..	9	9	4
Tongue ..	4	4	1
	777	378	109

In this group of 777 cases there was an operability of 49 per cent. and of the opreable cases there were 27 per cent. five-year survivals.

G. M.

OBSTETRICS & GYNAECOLOGY

Obstructing Tumors as a Hindrance to Birth.

A. Olsen, (*Zentralbl. f. Gynäk.* 57 : 863-871, 1933,) reports three cases in which the normal course of labor was prohibited by pelvic neoplasms. The first patient, a thirty-year-old primipara, was found to have a myoma of the cervix the size of a child's head. Through an abdominal incision the tumor was removed and a normal child taken from the uterus. Recovery followed. The second patient, a sixteen-year old primipara, came for examination at late term. A hard tumour was felt in the posterior part of the pelvis, which was thought to be an ovarian cyst. Exploration revealed a tumor, pathologically diagnosed as neurogangliofibroma, arising from the anterior portion of the sacrum. This was excised, and the abdomen closed. On the seventh day after operation labour started, but instrumentation was necessary to remove a stillborn child. The third patient was a thirty-eight-year-old primipara with neurofibromatosis. The process had involved the external genitalia to the extent that satisfactory examination was almost impossible, in fact the vagina was almost completely obstructed. Pregnancy was allowed to continue until the onset of labor. At the time Cesarean section was performed with delivery of a normal child. Convalescence was uneventful.

G. M.

Myoma and Pregnancy.

O. Koster (*Zentralbl. f. Gynäk.* 57 : 1473-1477, 1933), illustrates the manner in which uterine myomata may complicate pregnancy by citing three cases. The first occurred in a forty-year-old woman in the fourth month of pregnancy. At operation the myoma, was excised, a 20 cm. fetus was removed and the patient sterilized. The second patient came to term. A living fotus was removed by Cesarean section and the uterus was explored. Several myomata being found, the uterus was totally removed with the left adnexa and the right tube. After delivery of a normal child the third patient was explored and a single large myoma found. The uterus was completely removed. All three patient recovered satisfactorily.

Discussing the various means of treating such cases, the author advises as the optimum procedure, termination of the pregnancy and enucleation of the tumor, except where the mayomata are multiple, in which case total extirpation should be performed. As regards sterilization, the indications vary. If the tumor is single and the patient young, it is to be avoided. If the patient is nearing the end of the child-bearing period or has several children at the time, sterilization guards against difficulties in the future.

G. M.

Brenner's Tumor and Endometriosis.

E. G. Abraham, (*Zentralbl. f. Gynäk.* 57 : 1113-1129, 1933), reports the case of a thirty-one-year-old woman admitted for menorrhagia and lower abdominal pain. Pelvic examination revealed enlargement and tenderness of both adnexa. At operation both ovaries were found to be enlarged and both tubes distended apparently by a hydrosalpinx. Pathological examination revealed a tumor of the type described by Brenner, in the right ovary. A typical endometriosis was found with hydrosalpinx in the left tube.

This case, the author regards, as an unusual coincidence of Brenner's tumor and endometriosis in the same individual. Reviewing the somewhat sparse literature on the subject, and the clinical and pathological characteristics of his case, he concludes that the two conditions arise from a common anlage, namely the coelomic epithelium, developing as a result of a general predisposition as well as hormonal influences under constitutional conditions which are not clear. This hormonal influence is apparently exerted by the ovary, from which the impulse for the development of the tumor is derived. The endometrioid tissue, like that of Brenner's tumor possesses the capacity of a special function. Both give evidence of the power of heterogenous differentiation of the coelmic epithelium under the influence of an activating force. Both tumors are histologically and clinically relatively benign.

The histologic morphology of Brenner's tumor and endometriosis and the differing views of their origin and nature are discussed in detail. There are seven illustrations.

This is a good description of a relatively new pathological entity and presents in a lucid manner the arguments pro and con.

G. M.

RADIOLOGY & ELECTROTHERAPEUTICS

Study of Cases of Carcinoma of the Cervix not cured by Irradiation

F. Voltz (*Strahlentherapie* 47 : 475-484, 1933) reports that from 1921 to the end of 1927, 352 patients. with carcinoma of the cervix belonging to Groups I and II were treated in the Radiologic Department of the University Women's Hospital in Munich. All of these cases were either distinctly operable or on the border line of operability. A special study has been made to see what factors contributed to the bad results in the 217 patients who did not survive five years. Age apparently had a definite influence, as the percentage of cures increased up to the age of fifty and then decreased slightly. According to histologic differentiation of 302 squamous-cell, carcinomas 77 were considered "unfavourable", 135 "doubtful", and 90 "favorable" for irradiation. A follow-up of these patients shows that 75 per cent of those with growths graded "unfavourable" were dead, while only 56 per cent of those with "doubtful" and "favorable" tumors had succumbed before the end of the five year period.

The arrangement of the patients according to their social status showed that 83 per cent of those of the highest class, 54 per cent of the middle class, and 45 per cent of the lowest class lived five years. The favorable results in the upper class group were in part due to earlier diagnosis and more adequate treatment. Insufficient treatment, dependent on any one of many causes, was thought to have played a definite role in 12.5 per cent of the unsuccessfully treated cases. Several charts and numerous tables are included in the article.

G. M.

Radiological Concept of the Treatment of Cancer of the Breast

A. Soiland (*Radiology* 21 : 498-500, 1933). believes that radiation therapy is to be considered as the first line of offense in breast cancer and vouchsafes the statement that this agent should be used in all patients with cancer of the breast—

primary, metastatic, or recurrent—and that surgery should be limited to those primary tumors of the breast which prove to be radioresistant after an adequate course of x-ray therapy or radium implantation, or both. When mechanically possible, a sloughing, painful, and malodorous mass should be surgically removed, if for no other reason than that of palliation or sanitation. The author admits that the use of radiation therapy in all breast cancers is not due to any spectacular results achieved by radiation, but rather to the realization that surgery, *per se*, has decisively failed to change the clinical cure period over that which pervailed before modern radiation therapy came to the front. If cancer of the breast is curable by surgery, it is equally curable by radiation, and the end-results depend almost wholly upon the ability of the surgeon or the radiologist.

G. M.

Radiotherapy in the Leukemias

G. G. Palmiere. (*Bull. di. sci. med.* 105: 283-287, 1933.) discusses certain fundamental problems in x-ray in leukemia. The first of these is the moment to intervene. Here he stresses the value of irradiation of the spleen before splenectomy, the object being to reduce the size of the organ, to increase the coagulation time of the blood. (Splenectomy has been abandoned in America at least, as no definite benefit is obtained). Secondly he considers the moment to discontinue x-ray therapy, but on this he finds no definite statement possible. He then discusses the choice of the time for re-intervention, which he considers the most important point. The best results were obtained when the x-ray treatments were repeated at longer intervals, but the author recognizes the fact that in these patients the disease was probably running a favorable course, and feeling well, they did not return for early repetition of irradiation.

General irradiation has been tried at the Radiology Institute, small doses being given over the entire body, from a considerable distance, but this method is still in an experimental stage. The author reports good immediate results and some rather long remissions.

As to dosage, the author finds that the cases running the most favorable course, with the exception of the few in which generalized irradiation has been used, are those on which a single exposure of one third of an erythema dose, hard rays, heavily filtered, has been used. Smaller doses are used in subacute cases. Long periods of well-being and in many cases remissions have been obtained by this method.

G. M.

PEDIATRICS

Prognosis and Treatment of Rheumatic Heart Disease in Childhood

F. J. Poynton (*Practitioner: cxxx*, 638, 1933. Ref. *Brit. Jour. Child. Dis.* vol. xxi, July-Sept 1934) states that the mortality of acute rheumatism is higher among male than among female children, and varies in different years. In 1920, when the disease was severe, out of 172 cases, 22 died and 30 became complete invalids. The myocardium is more important than the peri—or endocardium. Grave infection of the myocardium is indicated by dilatation, profound anaemia, a weak and rapid pulse, restlessness and vomiting. The fatality is greatest at ages under 5 years. Nodules are of bad augury; 27 of 72 fatal cases in the writer's series showed them. Such children are very silent. Anginal attacks are infrequent. Favourable signs are palpability and circumscription of the cardiac impulse, diminution of the deep the cardiac dullness and renewed interest taken by the patient. If symptoms of mitral stenosis are difinite before twelve years the outlook is bad. The combination of aortic and mitral valvulitis is of serious import when the aortic lesion predominates. Such cases develop malignant endocarditis in early adult life. On the other hand, if the mitral lesion predominates, recovery may be good and the aortic lesions shrink. But if the myocardium is affected out of proportion to the valves, chronic invalidism may result. In some of these the valves may escape and the symptoms due to the weakened myocardium be assigned to indigestion. In such cases the increase of deep cardiac dullness points to the correct diagnosis. Pericardial adhesions causing permanent dilatation are of evil prognosis. The salicylates, even in combination with sodium bicarbonate, are disappointing in treatment, as they may cause vomiting, depression and even coma. Skilled nursing is essential, and complete rest, preferably with the head and shoulders slightly raised, should be adopted. At first milk, chicken broth and beef tea may be given. The temperature gives more cause for alarm when low than when high,

and no attempt should be made to lower it. The bowels should be opened with calomel gr. ½ and kept open with magnesia or syrup of figs. Antiphlogistine and the ice-bag are recommended for allaying praecordial pain. Tolysin is used in preference to the salicylates in 5-10 gr. doses as vomiting never occurs as it does at times with the salicylates. For sleeplessness potassium bromide is often sufficient, but if it fails nepenthe, at regular intervals throughout the twenty-four hours is advised. Digitalis in small doses steadies the heart, but should be stopped if nausea or vomiting occur. Some cases relapse with recurrent tonsillitis, and in such cases the tonsils may be removed with satisfactory results. On the other hand, removal of the tonsils during an active carditis may lead to a flare-up of the disease, which may prove fatal Acitivity may be resumed when the appetite and weight increase, a return to the normal limits of the temperature and pulse rate and diminution in the area of cardiac dullness. The following grades are advised: (1) Complete rest in bed; (2) bed, but allowed to walk to bathroom and w.c.; (3) up for 2½ hours daily; (4) up for 4½ hours; 5) up for 7½ hours, with permission to walk and run about; (6) up all day, with breathing exercises and light Swedish exercises; (7) up all day and walk for 1 mile. The author is doubtful of the value of the sedimentation rate.

J. C. B.

Blood Pressure in the Normal Child between the age of 4 and 15 Years

J. Chabrun and Y. Petrovitch (*Arch. de med. des enf.;* xxxiii, 601, 1920 Ref. *Brit. Jour. Child. Dis.* vol xxi, July-Sept. 1934) state that according to Koessler the arterial tension increases regularly with age and in accord with the height and weight. Garot and Schwers showed that the thickness of the tissues between the armlet and the artery caused the pressure to be overestimated. They took their readings from the leg in children under 6, from the arm in children over 6. The ascending curves noted by Koessler are not observed by these authors who found that the arterial pressure did not vary at different ages. Two methods were used by the present writers. (a) The auscultatory method of Vaquez-Laubry, in which armlets of 5 cm. are used for children between the ages of 4 and 12 years. In boys the maximum varied from 10-12 cm., the minimum from 7-75 to 10 cm.; in girls the maximum varied from 9.75 to 12 cm.; and the minimum from 7.75 to 9 cm. The differential pressure is low, about 2 cm., and tends to increase with age, especially in girls. These results are in accordance with those of Melvin and Murray. By Garot and Schwers the estimation of the maximum is much lower, and consequently the differential pressure becomes more considerable, but auscultotory methods are not easy to apply in children. With Pachon's apparatus the maximum pressure in boys rises from 8.75 to 12 cm.; the minimum 4.75 to 6.5.cm. In girls the maximum pressure is between 8.25 to 12 cm., and the minimum from 4.3 to 7.5 cm. The maximum pressure increases with and almost equally in both sexes. The minimum pressure increases less markedly, so that differential pressure increases also with age. The increase in arterial pressure is not regular. Between the age of 7 and 12 it is hardly apparent, but is marked between 12 and 14 years, at the time of puberty. The minimum pressure in children of the same age does not vary with their weight. The maximum pressure varies slightly with the weight. Garot and Schwers's results are criticized, the pressure in the arteries of the leg is generally higher, and the substitution of the arm for the leg in children over 6 is an artificial method of making the pressure equal at all ages.

J. C. B.

Tumours of Brain in Infancy

Sidney W. Gross (*Am. J. Dis. Child.* 739, Oct. 1934) has studied nine cases of verified tumors of brain between first and second year of life and summarises his observation as follows:

1. The differences between the intracranial changes produced by an expanding lesion in infancy and those produced in later life are due to the elasticity of the cranial bones in infancy which permit spontaneous decompression to occur as the lesion increases in size.

2. During early life tumors of the brain seem to be much more common in males than in females.

3. Enlargement of the head was a constant finding in 9 cases of tumor of the brain in infancy.

4. The midcerebellar region is the site of election of tumors of the brain in infancy, and was the location in 7 of the 9 cases reported by the author.

5. Histologically, neoplasms in infancy usually arise from glial elements and resemble the gliomas found in later life in similar locations.

6. Study of the literature indicates the occurrence of teratomas and sarcoma also in this age period.

7. In the differential diagnosis hydrocephalus due to causes other than tumor of the brain must be considered, notably obstruction of the aqueduct, the result of either an inflammatory process or a congenital defect, communicating hydrocephalus, subdural haematoma and abscess of the brain.

J. C. B.

Diet in Typhoid Fever in Children

N. Z. Oumikoff (*Arch. de med. des enf.* 37 : 351-354, June 1934. Ref. *Med. Times*, Oct. 1934) notes that typhoid fever in children usually runs a more benign course than in adults ; the ulcerative lesions in the intestines are less extensive and perforations are rare. A liquid diet, he believes is not necessary in typhoid in children, and is apt to result in malnutrition. He gives a mixed diet of liquid and solid food containing proteins, fats and carbohydrates ; the diet includes cereals, chopped meat and bread. In some severe cases the children themselves refuse solid food while the symptoms are at their height, and are given milk and bouillons. Of 429 cases of typhoid in children treated in the last fifteen years, 279 were given this mixed diet and 150 a liquid diet. Both groups included cases of all degrees of severity. The mortality was definitely reduced in the group given solid food : intestinal haemorrhage, which is rare in children, was reduced from 2.7 per cent. to 0.35 per cent and no case of perforation occurred in this solid food group. Other complications were also less frequent in this group. Recurrences were 22.7 per cent. in the group given liquids only, and 10 per cent in the solid food group. Malnutrition with the resulting exhaustion of the organism, the author believes, is an important factor in recurrences.

J. C. B.

ASSOCIATION NOTES

XI ALL-INDIA MEDICAL CONFERENCE

At a meeting of the Working Committee of XI All-India Medical Conference, which was held on the 10th November 1934, at 7-15 p.m. at the D. M. A. House, Daryaganj, Delhi, under the Chairmanship of Dr. M. A Anwari, the following resolutions were passed :—

1. Resolved that the minutes of the last meeting as read by the General Secretary be adopted.

2. Resolved that the dates for the XI All-India Medical Conference be confirmed as 26th, 27th, 28th and also 29th December 1934 if necessary, and the opening date of the All-India Medical Exhibition as the 26th December 1934.

3. Resolved that invitations be extended to the All-India Medical Licentiate's Association and the British Medical Association Branches at Lahore, Bombay and Assam.

4. Resolved that any eminent men interested in the science of Medicine may be invited as distinguished visitors by the Reception Committee to attend the Scientifi Section of the Conferance.

5. Resolved that the programme as drawn out by the General Secretary, with certain medifications be adopted.

6. Resolved that the timings followed in the Programme of the Conference be according the "Standard Time".

7. Resolved that the deliberations of the Conference be held in the Hall of the Hindu College, Delhi.

XI ALL INDIA MEDICAL CONFERENCE

(Hindu College Hall, Delhi)

PROGRAMME.

26th December 1934.

10-30 A.M. to 12-30 P.M. (Standard Time)	Opening of the Conference. Speech by the Chairman of Reception Committee, Dr. M.A. Ansari. Election of President. Presidential address by Col. Bhola Nath. Formation of Subject Committee. Election of Presidents of Scientific Sections by the Subjects Committee.
12-30 P.M. 2 P.M.	Interval
2 P.M. to 3-30 P.M.	Opening Ceremony of the All-India Medical Exhibition.
3-30 P.M. to 5 P.M.	Garden Party by Bengal Chemical and Pharmaceutical Works.
5 P.M. to 6 P.M.	Cine Film by Bengal Chemical & Pharmaceutical Works.
6 P.M. to 7 P.M.	Popular Lecture to Public :— Subject "Prevention of Eye Diseases" At the Hindu College Hall.
7 P.M. to 8-30 P.M.	INTERVAL.
8-30 P.M. to 10-30 P.M.	Meeting of Subjects Committee.

27th December 1934.

10 A.M. to 1 P.M. (Standard Time)	Scientific Section.
1 P.M. to 2 P.M.	INTERVAL.
2 P.M. to 4 P.M.	Conference Resolutions.
4-30 P.M. to 6-30 P.M.	Delegates to be taken round the A & U Tibbia College and Hospital. At Home by the staff of the A & U. Tibbia College.
7 P.M. to 8 P.M.	Popular Lecture :— Subject : "Prevention of Tuberculosis" By : Dr. A. R. Mehta of Anti T. B. King's Thanks giving Fund. At the Hindu College Hall.
8 P.M. to 9-30 P.M.	INTERVAL
9-30 P.M. to 11 P.M.	Meeting of the Central Council of the Indian Medical Association.

28th December 1934.

10 A.M. to 12 A.M. (Standard Time)	Open Conference— Conference Resolutions
12 Noon to 1 P.M.	Scientific Section.
1 P.M. to 2-30 P.M.	INTERVAL.
2-30 P.M. to 4-30 P.M.	Scientific Section.
4-30 P.M. to 6-30 P.M.	At Home by the Reception Committee.
6-30 P.M. to 7-30 P.M.	Popular Lecture :— Subject :—"Welfare work in America" By : Dr. Mrs. Ruth Young. At the Hindu College Hall.
8-30 P.M.	INDIAN DINNER by Dr. M. A. Ansari, at "Dar-es-Salam" Daryaganj, Delhi.

29th December 1934.

10 A.M. to 12 Noon. (Standard Time)	Annual Meeting to the Indian Medical Association
12 Noon to 1-30 P M.	Scientific Section.
1-30 P.M. to 3 P.M.	INTERVAL.
3 P M. to 6 P.M.	Visits to institutions and noteworthy [illegible]

MEDICAL ASSOCIATIONS, SOCIETIES, ETC.

Medical Societies Associations, Unions etc. are invited to make use of this section of the Journal. —Editor

TWO THESIS PRIZES

Open to Members of the All India Medical Licentiate Association only

Subjects :—*Antenatal diseases, their care and treatment.* Dr. Joseph Benjamins Thesis Prize of Rs. 35/- for the year 1934.

Cerebro-spinal Fever—For Dr. P. S. Ramachandrier's prize of Rs. 25/- for the year 1934.

The period for receiving both these competative thesis papers, is extended to 31st March 1935 and that the thesis papers be sent to Dr. Joseph Benjamin, President of the Gujrat Branch of the A.I.M.L. Assn., Dalgarwada, Ahmedabad, so as to reach him on or before the 31st March 1935. The papers should not exceed one thousand typed lines.

Dr. N. R. Karandikar Thesis Prize oi Rs. 35. (Open to members only).

The subject for the thesis will be"*Paraplegia*"

The period for receiving this competetive thesis prize, is extended to 31st March 1935 and that the thesis paper be sent to Dr. N. R. Karandikar, 56, Parel village, Bombay 12, so as to reach him on or before the 31st March 35. The paper should not exceed one thousand typed lines.

BENGAL PROVINCIAL CONFERENCE OF THE ALL INDIA MEDICAL LICENTIATES' ASSOCIATION, CALCUTTA SESSION 1935.

The Calcutta Branch has invited the Provincial Conference of the Medical Licentiates of Bengal. A reception Committee has been formed with Dr. Kali Prasanna Sen, as Chairman and other office-bearers. It has provisionally been decided to hold the sessions in the latter part of January 1935.

Arrangements are being made to provide accommodation and other comforts to the delegates of the different branches of the Association who would grace the occasion by their presence.

In view of the many problems affecting the medical profession in general and Licentiates in particular it is expected that almost all the leading Licentiates from the districts of Bengal will join the Conference.

The Licentiates practising in Calcutta and its suburbs are requested to enlist themselves as members of the Reception Committee the minimum fee for which has been fixed at Rs. 2/- only. The responsibility for making the Session a successful one devolves upon the Licentiates of Calcutta and its suburbs and it is expected that as on pervious occasions they will respond generously to this appeal.

A scientific section will also be held along with the Conference. Scientific papers are also invited from the medical profession.

The name of President of the Conference and exact dates etc. will be notified hereafter.

Further particulars can be had from the Hony. Secretary at 27c Upper Circular Road, Calcutta.

CORRESPONDENCE

To

THE EDITOR,

JOURNAL OF

THE INDIAN MEDICAL ASSOCIATION.

Dear Sir,

I read with great interest the letter of Dr. Jyoti Dhar published in your esteemed Journal.

The questions put by Dr. Dhar though apparently simple are undoubtly of far-reaching consequence and deserve more than a casual treatment in the correspondence section of your Journal. The editorial invitation for answers to those questions is undoubtedly an appreciation of the fact that the matter merits a serious consideration, and is probably prelude to a leader on the topic.

To begin with I confess that I have had some difficulty in understanding the drift of the first question in as much as it does not appear sufficiently clear from the wording of the first part of the question that the workers started the investigation jointly on an understanding of mutual collaboration. This is a point of vital importance because the tests to be applied to the determination of the right of joint-authorship are mutuality and probity amongst the workers. There is, however, obviously no question to ask when several scientific minds launch upon the same investigation independently of any assistance from any other research worker. To work together for a common end and then to publish the results as the work of a single man is what the ancient Romans called "*Furtum usus* (theft of use). We in our times may safely style this as unrefined scientific plagiarism amounting to an unquestionable infringement of the right of authorship. If our colleague Dr. Dhar has had occasion to suffer in this regard he has justice always on his side.

Coming to the second question I would like to prescribe a remedy. The unfortunate co-worker should put forward his claims, unless suffering from a false hyper-acute sense of delicacy, and thus expose the putative father of the sorry child. So long as science aims at truth and nothing but the truth it must continue to be the birth-right of every scientific worker to harness public opinion

The reply to the third question is plain enough. It is conceivable that in the particular type of investigation of a problem like Pregnancy Anaemia the spade-work of the pathologist is heavier than that of either the clinician or the obstetrician. Inspite of this fact it would be a serious breach of scientific etiquette even on the part of the pathologist if he publishes a paper on the subject independently of his co-workers, not to speak of the obstetrician or the clinician. In my humble opinion the important bodies like the Indian Medical Association, the Calcutta Medical Club and the Medical Council should make this type of mean exploitation impossible even in the case of highly placed medical officials.

The rights of the humblest medical research-worker must be jealously guarded if the M. D. degree of the Calcutta University is not to be the property of a chosen few in Bengal.

I remain
Sir
Yours sincerely
Probodh Kumar Banerjee.

Kosgi. (M. S. M. Ry.)
Bellary Dt. 15-11-34.

To

THE HON. SECRETARIES,
THE INDIAN MEDICAL ASSOCIATION.
67, DHARMATALA STREET, CALCUTTA.

Sirs,

May I in all humility approach the members of the Assn. with the following appeal to standardise the subscription; the irregularty that the Association is burdened with at present.

The subscription for a direct member is Rs. 12/- per annum. where as it is only Rs. 3/- for a member through a branch. Though such a reduction in the later case may have been with a view to encourage provincial or branch organisations, our experience in the matter has been to the contrary. Hence I submit that a graded scale of

subscriptions may be adopted to encourage all medical practitioners settled in the villages and open the portals of the I. M. A. to one and all without totally incapacitating them for not being able to organise branches, which is not in itself an easy affair ; or impose heavy subscriptions for being a direct member.

For my part I would humbly suggest in these hard days of tremendous depression that a subscription of Rs. 5/- per annum may be adopted with an admission fee of Rs. 1/- if required for all medical men whose monthly income is Rs. 250/- or less with all the privileges of other members.

This course would I hope encourage many medical practitioners mostly from the under incomed licentiates class in the muffussal villages and make the Indian Medical Association a solidly represented body of all classes of medical men.

Thanking you in anticipation.

I beg to remain,

Dear Sirs,

(*Illegible*)

Regd. Medical Practitioner.

CLASSES IN MODERN X-RAY TECHNIQUE

Dear Sir,

Classes in modern X-Ray Technique seem to meet a wide demand in this country judging by the large attendance which marked two such lecture courses held in Bombay some time ago.

As part of the purely educational facilities offered by the Victor X-Ray Organization it is contemplated to arrange for a similar course at a convenient center in the eastern part of India under the sponsorship of this firm. It is understood that these classes are conducted on a strictly educational and non-commercial basis. Further details will be found in the attached folder.

Since the lecturer is available for either December or January next we shall endeavour to meet the preference of the majority in fixing a definite date for this course ; your early comments are therefore invited. There is no obligation regarding eventual enrolment involved at present. An early decision may, however, be advantageous since the total number of students admitted may have to be limited.

Faithfully yours,

International General Electric Co. (India), Ltd.,

Calcutta Office.

MEDICAL NOTES AND NEWS

[Item of news and notes of general interest to the profession for incorporation in this section from the members of the profession will be greatly appreciated—EDITOR]

JOINT COMMITTEE'S REPORT AND INDIAN CONSTITUTIONAL REFORM

(SESSION 1933-1934)

Provisions of Medical Act, 1886

361. The question of the mutual recognition of medical practitioners in the United Kingdom and British India has unhappily become a matter of political controversy in India during the last few years; and in view of its importance to both countries, it seems desirable that we would describe shortly the present position. The Medical Act, 1886, empowers His Majesty by Order in Council to apply the Act to any British possession "which in the opinion of His Majesty affords to the registered medical practitioners of the United Kingdom such privileges of practising in the said British possession....as to His Majesty may seem just". The Act has been applied to British India, in view of the recognition there accorded to practitioners registered in the United Kingdom and this entitles any person who holds an Indian medical diploma recognised for the time being by the General Medical Council as "furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery and midwifery" to be registered on application in the United Kingdom medical register. The Act also provides that, where the General Medical Council have refused to recognise a medical diploma for this purpose, the Privy Council, on application being made by them, may, if they think fit, after considering the application and after communication with the General Medical Council, order the latter to recognise the diploma, and the Council are thereupon under a statutory obligation to do so. It will be seen that, though the Act is based upon the principle of reciprocity, the General Medical Council is not compelled to give an automatic recognision to each and every diploma conferred in the other countries to which the Act applies, but is entitled subject to an appeal to the Privy Council, to satisfy itself that any particular diploma is such as to furnish a sufficient guarantee of the possession of the requisite medical knowledge and skill. We understand, that, incountries where there is some central authority corresponding to the General Medical Council, the Council is accustomed to consult that body for the purpose of satisfying itself that a particular diploma about which perhaps a question has been raised affords the guarantee required; but where such body does not exist, the Council must of course make its own inquiries. We should point out that the General Medical Council in the United Kingdom does not itself confer medical degrees. It keeps the medical register; that is to say, a register of medical practioners who have passed a qualifying examination in medicine surgery, and midwifery, held by Universities in the United Kingdom and certain other bodies, in which a standard of proficiency satisfactory to the Council has been attained; and the Council though they do not themselves examine, are thus able in effect to secure that the qualifying examinations and the standard of proficiency are adequate.

Withdrawal of Recognition of Indian Medical Diplomas

362. Until very recently there was no central body in India correspondenting to the General Medical Council, and therefore no authority with power to secure and maintain a common standard for the medical qualifications evidenced by the diplomas recognized by the various provincial Medical Councils in India. It appears that there was in consequence a considerable variation in the standards adopted by these bodies, and the Council some four years ago took the drastic step of refusing any longer to accord recognition to Indian medical diplomas, as the Indian Legislature had refused to provide the money for a system of inspection which would have been acceptable to the General Medical Council pending the establishment of a system of inspection by an All-India Medical Council. It is perhaps not surprising that the action of the Council caused resentment and pro-

test. It was believed by many that political, or at least ulterior, motives lay behind it; but no one who is aware of the integrity and independency of the Council, and its complete dissociation from every kind of political influence, can doubt that it was inspired solely by a desire to promote the interests of medical education and to secure the highest standard of proficiency in those who claimed to be admitted to the United Kingdom register. On the merits of the dispute we are not of course competent to pronounce, or are we able to say whether the Council might have achieved their purpose in some way less likely to wound Indian susceptibility; but of the purity of its intentions we cannot entertain any doubt, and it is to be regretted that none of those affected thought fit to avail himself of the right of appeal to the Privy Council and to obtain a decision from a body whose impartiality could not be questioned.

Indian Medical Council Act, 1933

363. The controversy has had, at any rate, one satisfactory result; for the Indian Legislature have now passed an Act known as the Indian Medical Council Act, 1933, which sets up a Medical Council for the while of British India with substantially the same functions as those of the General Medical Council in the United Kingdom. This Act sets out in the First Schedule the medical qualifications granted by medical institutions in British India, which are to be recognised for the purposes of the Act, and gives the council power to secure by inspection and, in the last resort, by the withdrawal of recognition an adequate standard of proficiency. In the Second Schedule are set out the medical qualifications granted by medical institutions outside British India which are to be recognized for qualifications granted by licensing bodies in the United Kingdom which admit to the United Kingdom medical register. These are to be continued unaltered for a period of four years, but the Council are empowered to enter into negotiations with the authority in any country outside British India entrusted with the maintenance of a register of medical practitioners for the settlement of a scheme for the reciprocal recognition of medical qualifications. The Governor-General is to be informed of the decisions of the Council to recognise or refuse to recognise the medical qualifications proposed by the authority abroad for recognition in British India; and he is to frame a new Schedule (to become effective four years after the commencement of the Act) which will comprise the medical qualifications thereafter to be recognised. Provision is also made enabling the Governor-General in Council after the expiration of four years to amend the Schedule and to add further qualifications granted before or after a specified date. It will thus be seen that the Governor-General in Council would, on the representations of the Indian Medical Council, be free to withdraw at any time after the expiration of four years the recognition in British India secured to medical practitioners on the United Kingdom medical register, though there is a saving for all medical qualifications granted previously.

The Act a Basis for Satisfactory Arrangements in the Future

364. We apprec'ate and sympathise with the efforts of the Indian medical profession to put its house in order, and we hope that co-operation between the two Councils (for we are convinced that the good w.ll is not lacking on either side) will go far to ensure an amicable and agreed solution of the present difficulty. We are of opinion that the Indian Medical Council Act, with only slight modifications, can be made the basis of a permanent and satisfactory arrangement. The reference in the Act to the Governor-General in Council will in any event require modification under the new Constitution, and at first sight it would appear that it would be sufficient to substitute a reference to Governor-General i.e. the Governor-General advised by his Ministers, since this is matter falling within the ministerial sphere. But we confess that we should find difficulty in agreeing that the Governor-General is an appropriate authority for determining whether any particular qualification should be recognised; for this is not a matter of policy, but one which involves technical and professional considerations. We think that the true solution is to be found in an adaptation of the provisions in the United Kingdom Act which we have mentioned above, whereby any refusal by the General Medical Council to recognise a medical diploma granted aborad may be made the subject an appeal to the Privy Council; and we suggest that if after the expiration of four years the Indian Medical Council

proposes to withhold recognition of any of the United Kingdom qualifications set out in the Second Schedule to the Indian Act, an appeal should lie to the Privy Council, whose decision should be final. The Act of 1886 requires the Privy Council, before giving its decision on a refusal to recognise a diploma granted abroad to communicate with the General Medical Council, and there should be a correspondence provision that in the converse case there should be communication with the Indian Medical Council ; but we are disposed to think that the law should be amended so as to provide in either case both Councils should be communicated with before the decision of the Privy Council is given. We hope that before the four years have expierd, as a result of joint action between the two Councils, the General Medical Council will have seen its way to restore its recognition of Indian diplomas, and that discussions may proceed between them free from political influence or bias and with the sole object of promoting the interests of medical education in both countries.

The Indian Medical Service.

365. There is one aspect of this question which seems to us to present special features. It is not necessary to emphasise the importance on the Indian Medical Service from the military point of view ; and in our opinion the members of the Service ought, by virtue of the commissions which they hold, to be deemed to possess all necessary statutory qualifications entitling them to practice. The same principle should apply to members of the Royal Army Medical Corps and of the Royal Air Force Medical Service.

Medical and Superior Raillway Service

467. When the Burma White Paper was first published, the question of continued recruitment by the Secretary of State to the Medical and the Railway Services was still under examination. We understand, however, from the subsequent Memorandum submitted to us by the Secretary of State that as regards the Railway Services the intention now is that the proposed statutory Railway Board for Burma shall, in conjunction with the Public Service Commission, control recruitment. We have already recommended that recruitment for the Railway Service in India should be in the hands of the new Railway Board, and we see no reason why the same principle should not be applied also in the case of Burma. As regards the question of recruitment to the Medical Service, we are informed that this matter is still under consideration, and we have sufficient information before us to make any considered recommendation ; but we are disposed to think that for the time being some recruitment by the Secretary of State of European medical officers must continue.

Medical Qualification

475. As regards professional qualifications, other than medical we have nothing to add to what we have already said in the case of India. As regards medical qualifications, the position is different. A local Burma Act at present entitles any person holding a British or Indian medical qualification to be enrolled on the Medical Register in Burma, but also empowers the Burma Medical Council to refuse to register any particular practitioner who holds only a qualification conferred in a Dominion or foreign country which does not recognise Indian medical degrees. The recent action by the General Medical Council, to which we have referred elsewhere, in withdrawing their recognition of Indian medical diplomas, did not affect Burma specially, since we understand that at that time there was no authority in Burma by which such diplomas were granted ; but we are informed that diplomas are now granted by the University of Rangoon. The Indian Medical Act, 1933, which sets out the Indian register does not include among them any diploma granted in Burma, but contains provisions enabling Rangoon diplomas to be included in the list, if the Indian Medical Council are satisfied after investigation that the standard of proficiency prescribed by the University of Rangoon is adequate. According to our information, however, the procedure prescribed by the Act will take some time, and it is uncertain when the Rangoon diploma will in fact admitted to the list ; and in these circumstances the position is one of some doubt and obscurity, especially as the Indian Act will obviously require some modification in its application to Burma after the separation of the two countries.

Suggestions for Future

476. We think that all persons at present practising medicine in Burma by virtue of a United Kingdom or Indian qualification ought in any event to have that right assured to them. As regards the future, we hope that it will eventually be found possible by means of reciprocal arrangements between the General Medical Council and the Indian Medical Council on the one hand and the Burma authorities on the other arrive at a solution satisfactory to all concerned. In the meantime we think that statutory provision should be made to secure to holders of United Kingdom and Indian medical qualifications which are recognised by the General Medical council the right to be enrolled on the Medical Register in Burma. The precise form which the provision should take will require examination, but we think that reciprocal arrangements should be made by which the medical degrees granted by Rangoon University, if and when recognised by the Indian Medical Council and the General Council, would receive a similar measure of protection in India and in the United Kingdom to that which we think suitable for United Kingdom and Indian qualifications in Burma.

Certain Social Services Should be Included in Concurrent List

240. It is proposed in White Paper that such subjects as Health Insurance and Invalid and Old Age Pensions should be subjects of Provincial Legislation. We see serious objection to this, and consider that they should be included in the Concurrent List. While it is necessary that the more industrialized Provinces should be able to legislate on these subjects in the interests of the urban workers and should not have to wait for the concurrence of those which are predominantly rural, it is undesirable to exclude the possibility of All-India legislation which may well become necessary in order that there should be uniformity of treatment of the workers as between Province and Province and that industry in another. Mr. N. M. Joshi, in the Memorandum submitted by him, agreed that social insurance should also be included in the list of Federal subjects, but here, again, we consider it would be better that it should be in the Concurrent List.

The Indian Medical Service (Civil).

299. Under existing arrangements there is no direct recruitment for the Indian Medical Service (Civil). Vacancies are filled form among officers appointed to the Indian Medical Service who have had a period of military duty. We note the view expressed in the Report of the Services Sub-Committee of the first Round Table Conference that there should in future be no Civil Branch of the Indian Medical Service, and that the Civil Medical Service should be recruited through the Public Services Commissions. The Sub-Committee however added that the Governments and Public Services Commissions in India should bear in mind the requirements of the Army and of British officials in India, and should take steps in recruit an adequate number of European doctors to their respective Medical Services and to offer such salaries as would attract a good type of recruit. We are however convinced on the information supplied to us that the continuance of the Civil Branch of the Indian Medical Service will provide the only satisfactory method of meeting the requirements of the War and of European members of the Civil Services, and that it will be necessary for the Secretary of State to retain the power which he at present possesses (although medical matters have since 1920 been under the control of Ministers) to require the Provinces to employ a specified number of Indian Medical Service officers. In making these recommendations we have not been unmindful of the natural desire of the Provinces to develop Medical Services entirely under their own control. But the requirements of the Army and of the Civil Services have an overriding claim.

SIR BHALCHANDRA KRISHNA MEMORIAL PRIZE MEDAL

At a meeting of the Subscribers of Sir Bhalchandra Krishna Memorial Fund held on the 11th July 1924 the following Resolution was adopted :—

"That from the funds collected to perpetuate the memory of the late Sir Bhalchandra Krishna, Kt., a Memorial Prize Medal be founded to be awarded every year on the anniversary of his death to a member of the Medical Profession who submits a thesis or delivers a lecture on any medical subject before a meeting of the Medical Profession to be held under the auspices of the Bombay Medical

Union, preference to be given to one who submits any original or research work especially with reference to Indigenous Medicine on Western lines".

In consonance with the above Resolution members of the Profession are invited to submit a thesis or a paper by the 15th of January 1935 to the undersigned for submission to a Selection Committee making the above award.

The thesis or paper shall have to be read by the prizeman on the day of the award at a meeting of the Profession to be held in accordance with the above Resolution.

Suggestions of Dr. S. L. Sharma regarding the proposed changes in the constitution, rules and regulations of the U. P. Medical Act of 1917 and in the Medical Ethics Approved by the U. P. Medical Council in 1929.

1. The objects of registration are the following :—

(a) To maintain a correct list of qualified and registered medical practitioners for the information of law courts, the Govt. and General public so as to enable them to discriminate between qualified and unqualified persons.

(b) To state definitely what rights and privileges shall be enjoyed by qualified and registered persons.

(c) To ensure that qualified and registered practitioners shall maintain a high standard of professional etiquette and strictly observed medical ethics.

(d) To deal with cases of professional misconduct amongst qualified practitioners.

(e) To inspire confidence amongst the general body of qualified practitioners, so that no practitioner may remain unregistered and it is necessary that the council constituted under the Act should be really representative of the medical profession of these provinces which comprises mostly of the independent practitioners without whose cooperation the above object can not be achieved.

1. After the preamble on page 3 of the Act "after the United Provinces" add "and to deal with all matters affecting the medical profession". On page 4 in Sub sec. (1) section 4.

Substitute seventeen members. The Medical Council shall consist of seventeen members appointed in the following manner :—

(a) President—a non-official elected by the Council. 1.

(b) Five members to be nominated by the Local Govt. 5.

(c) One member elected by the Medical Faculty of the Lucknow University. 1.

(d) One member to be elected by the Medical Practitioners who :— 1.

(i) are registered under the Medical Acts or are Doctors, Bachelors, or Lincentiates of Medicine or Masters of Obstetrics,or Masters, Bachelors or Licentiates of Surgery of an Indian University.

(ii) are residing in the United Provinces and registered under this Act ;

(iii) are in the service of Government.

(e) Two members to be elected by the medical practitioners who are not in the service of the Government and who have not obtained their degrees or licenses from the universities of Allahabad or Lucknow, but are otherwise qualified in the manner prescribed in clause. (c) 2.

(f) One member to be elected by the Medical practitioners who, not being qualified in the manner prescribed in sub clause (i) of clause (c). 1.

(i) are residing in the United Provinces.

(ii) are in the service of the Governmet.

(g) Three members to be elected by medical practitioners who are not in the service of the Government but are otherwise qualified in the manner prescribed in clause (e) 3.

(h) One member to be elected by women medical practitioners who are qualified in the manner prescribed in clause (g) of this suggestions

(i) Two members to be elected by the medical graduates of the Universities of Allahabad and Lucknow who are not in the service of the Government. 2.

17.

(2) Sub section 2 of section 4 to be deleted.

(8) Under the pending constitution of the Council the following should be added at the end "the electorate for elected seats shall be joint except.

(c) i.e. (Seat from the Faculty of Medicine of Lucknow University) but the seats shall be reserved according to the schedule given above under the constitution of the Council.

Page 9 Section 20

(4) Add "situated in the Provinces" after Medical College or School, and Sec. 20. Omit "other than a college or school affiliated to universities of Allahabad, Lahore, Calcutta or Madras".

(5) *Sec.* 21. (b) and (c) Substitute "registered under the B. M. Act or any Indian Provincial Medical Act" in place of "registered under the Medical Acts".

Privileges of Registered Practitioners :—

Privileges of Registered Practitioners :—

(6) *Sec* 32. add Clause "(a)" after section 32. Add Sec. (b) as follows :—

(b) The following privileges shall be conferred upon the medical practitioners registered under this Act.

(i) Eligibility for possession and dispensing of British Pharmacopeal drugs including poisons and their preparations to their patients without taking out any license under the Poisons Act or any other act or rules made by the Govt.

(ii) Privilege of giving certificates to Government servants in case of illness without the necessity of counter signature by any Govt. medical officer.

(iii) Privilege of giving certificates to students for admission to technical and professional colleges and institutions, to candidate for Government appointments of physical fitness and in medico-legal cases.

(iv) Privilege of granting certificates of vaccination without need of counter signature of Government Medical Officer.

(v) Privilege of granting certificates in connection with Civil, Naval, or Military matters.

(vi) Privilege of granting such other certificates which he may be required to give during the course of his practice of medical profession and those certificates should as a matter of course be accepted by the Heads of the Departments of the Government or other authorities concerned.

In case of non-acceptance of any such certificate, reasons for refusal shall be specified in writing and forwarded to the U. P. Medical Council for information and disposal.

(vii) Page 14 Para 4. of schedule. Add between the words "Bengal" and "or" in para 4 of the schedule.

"Or United Provinces Board of Medical Examinations or U. P. State Medical Faculty.

(viii) RULES :—

Rules. Vide sec. 13 of the Act.

"Add interpallations of which a week's notice has been given by any member of the Council shall be replied by the President of the Council and recorded in the minutes, also supplementary questions arising as a result of the replies shall be answered and recorded. The President will state his reasons in writing in case he refuses to reply any interpallations and such reasons shall be read out before the meeting and recorded in the minutes.

(2) Page 19 sec. 5 sub sec. 2 "final" add" the details of the questions to be decided by him shall be placed before the next meeting of the Council !

(3) Page 21 Sec. 10 Sub sec. (2) after "returning officer" add "and either the candidates or their representatives if so desired by them".

(4) Page 23, Sec. 6, Sub sec. 1. after "seconder" add "or a representative duly authorised in writing".

(5) Page 23, Sec. 6. Sub sec. 2 at the end of the paragraph add "the details of the question so decided by him shall be placed before the next meeting of the Council".

(6) Page 44, Sec. 6. (b) add at the end "they will not apply to the extraordinary meetings held under rule 4".

(7) Page 48, Sec. 41. delete "and may be published at the discretion of the President" and substitute "and shall be published in the Government Gazzette and important medical journals".

(9) All rules to be amended according to the above amendments to the Medical Act.

In the Opinion of the Sub-Committee

The following medical ethics are unnecessary and detrimental to the welfare of the medical practitioners and if they will not be removed from the code of medical ethics, they are sure to react on the admission of the medical register and compel a large number of medical practitioners with a registerable qualification to keep themselves out of the fold of the medical register.

(1) Entering into any compact in his personal capacity with a pharmacist or any manufacturer or firm dealing with medical and surgical

appliance or requisites, to receive a share in the profits arising from the sale of medicines prescribed, or medical or surgical appliances.

(2) Keeping an open shop, that is, one for the sale of medicines, medical or surgical appliances, etc., other than those prescribed by himself or by another registered practitioner, or styling his dispensary in such a way as to cause it to be taken for a chemist's shop, e.g., "Nelson and Co., Dispensing Chemists," etc.

(3) Taking any part in the manufacture, or sale of a proprietary food or medicine.

Vienna Post-Graduate Courses

Two intensive courses will be given by the American Medical Association of Vienna beginning on 18th, February 1935. These courses will cover in a period of six weeks a general survey of the newest methods and principles in the fields of Gynaecology & *Obstetrics* and of *Ear, Nose and Throat*. There will be in each of these specialties approximately one hundred and fifty hours of lectures and clinical instruction. The cost of the entire course inclusive of the life membership fees in the Association will be 900 Austrian Schillings (S 5.20 for 1 $ or S 26.15 for 1 £).

This is to be paid in the form of two instalments the first of which in the amount of 200 Schillings should accompany the registration and the balance paid upon beginning the work. The registration must be in the office of the Association not later than the first day of January and if the minimum number of six physicians is not reached by the fifteenth of January the registering members will be notified and the deposit will be returned. Intensive courses of like nature and at the same cost may be arranged at any time for a minimum of seven participants in any of the specialties. All instruction is in the English language and given by the leaders in the field in *Vienna the Center of the Medical World*. For further information address the American Medical Association of Vienna, Alserstrasse 9, Vienna, Austria.

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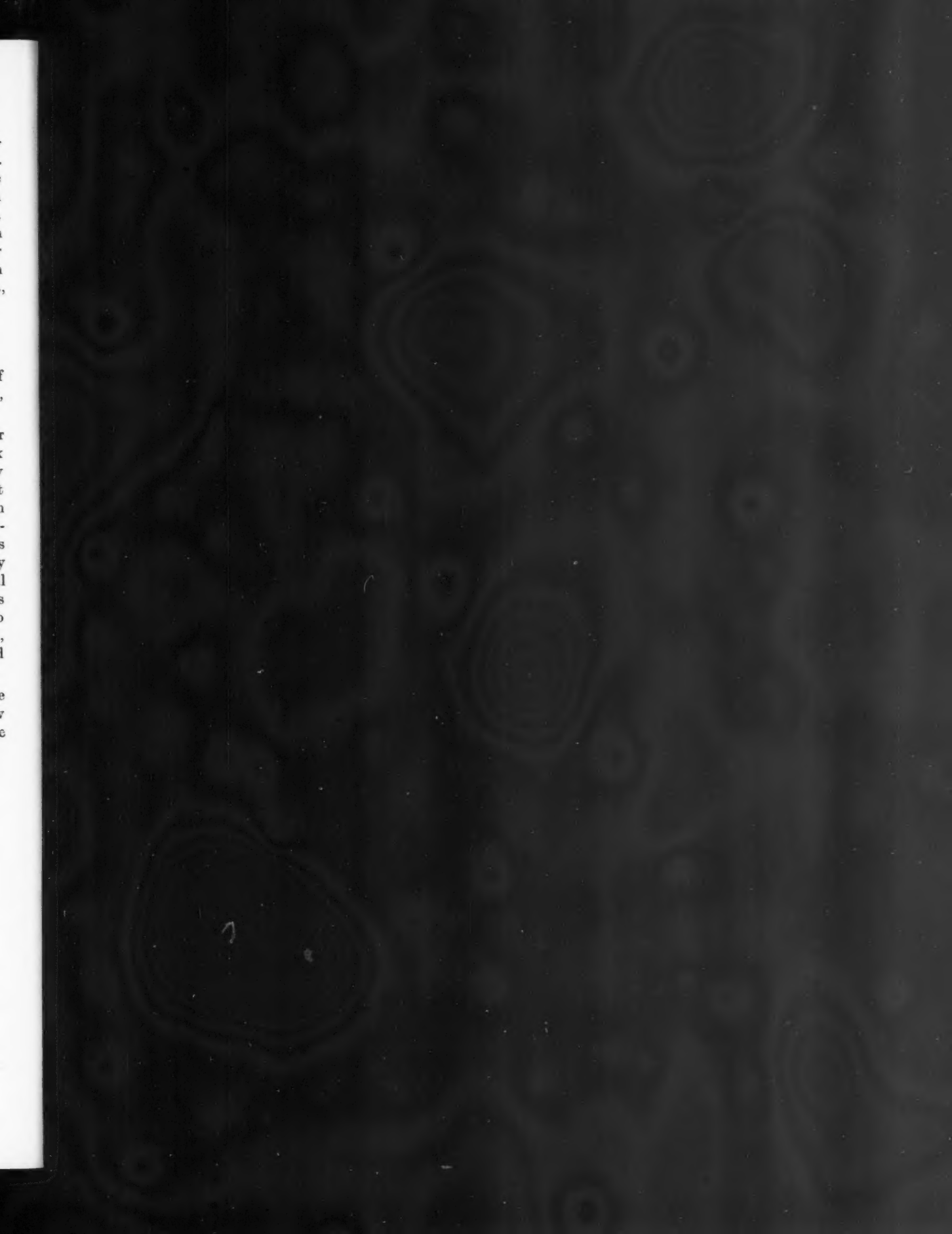

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